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Bureau of Mines Information Circular/1984

Analyses of Natural Gases, 1983

By Floyd R. Hertweck, Jr., and Daphne D. Fox

UNITED STATES DEPARTMENT OF THE INTERIOR

Information Circular 8993

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UNITED STATES DEPARTMENT OF THE INTERIOR
William P. Clark, Secretary

BUREAU OF MINES
Robert C. Horton, Director

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ANALYSES OF NATURAL GASES, 1983

By Floyd R. Hertweck, Jr.,[1] and Daphne D. Fox[2]

INTRODUCTION

This Bureau of Mines publication contains analyses and related source data for 349 natural gas samples from 26 States and 2 foreign countries. The 3 samples from foreign countries and 339 of the U.S. samples were collected during calendar year 1983. The remaining seven samples were collected earlier, but releases granting permission to publish were not received until 1983. All samples were obtained and analyzed as part of Bureau of Mines investigations of the occurrences of helium in natural gases of countries with free market economies. This survey has been conducted since 1917. The analyses published herein were made by the mass spectrometer and chromatograph.

The results of these investigations are published annually to make the information available to the petroleum industry and the general public. Twenty-seven publications have presented the results of 13,332 gas analyses made prior to 1983. The first three bulletins (1-3)[3] contain analyses and related source data on 5,218 gas samples collected from 1917 through 1960; these bulletins have been supplemented annually by information circulars (4-17, 19-24, 26-27) containing 8,104 analyses of samples collected since 1960.

In 1976, a compilation of the analyses made prior to 1975 was prepared by the Bureau of Mines and published by the National Technical Information Service of the U.S. Department of Commerce (18). This compilation contains 10,562 analyses of gas samples from gas and oil wells and natural gas pipelines in 37 States and 23 foreign countries. In 1982, a compilation of analyses made prior to 1980 was published (25). The 1982 publication contains 12,554 analyses of gas samples from gas and oil wells and natural gas pipelines in 39 States and 24 foreign countries and includes the analyses from the 1976 publication.

In addition to being in the publications, all analyses and related information published through 1983 are available on a magnetic tape file. The tape is available for $140 from the National Technical Information Service, Springfield, VA 22161; orders should refer to Bureau of Mines tape PB 84-188978.

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[1]Geologist.
[2]Helium resources survey clerk.
Section of Helium Resources Evaluation, Branch of Helium Resources, Helium Field Operations, Bureau of Mines, Amarillo, TX.

[3]Underlined numbers in parentheses refer to items in the list of previous publications at the end of this report.

ACKNOWLEDGMENTS

The helium survey program is conducted by soliciting natural gas samples throughout the United States and other countries with free market economies. Without the assistance of the petroleum industry, State and Federal agencies, and many individuals engaged in oil and gas exploration and production, the helium survey in its present scope would not be possible. The analyses listed in the tables were made by the Section of Technical and Analytical Services, Helium Field Operations, Bureau of Mines, Amarillo, TX. The list of analyses was produced through use of a computer by the Section of Automatic Data Processing, Helium Field Operations, Bureau of Mines, Amarillo, TX.

GEOLOGIC PROVINCES OF THE UNITED STATES

The tables include geologic province codes so each sample source can be located within a specific geologic province as defined by the Committee on Statistics of Drilling of the American Association of Petroleum Geologists.[4] These provinces, which are given in the following list and shown in figure 1, are delineated by political boundaries for convenience and for accommodation of data-processing equipment. Not all of the provinces shown are gas-producing areas, so many of the codes are not used in this publication. Since State or Federal ownership is not always known in offshore areas, only one code is used for each State. Owing to the lack of information on the location of wells in Alaska, only one code, 972, is used for all wells.

The following list and figure 1 are taken from the article cited in footnote 4.

[4]Meyer, R. F. Geologic Provinces Code Map for Computer Use. AAPG Bull., v. 54, No. 7, July 1970, pp. 1301-1305.

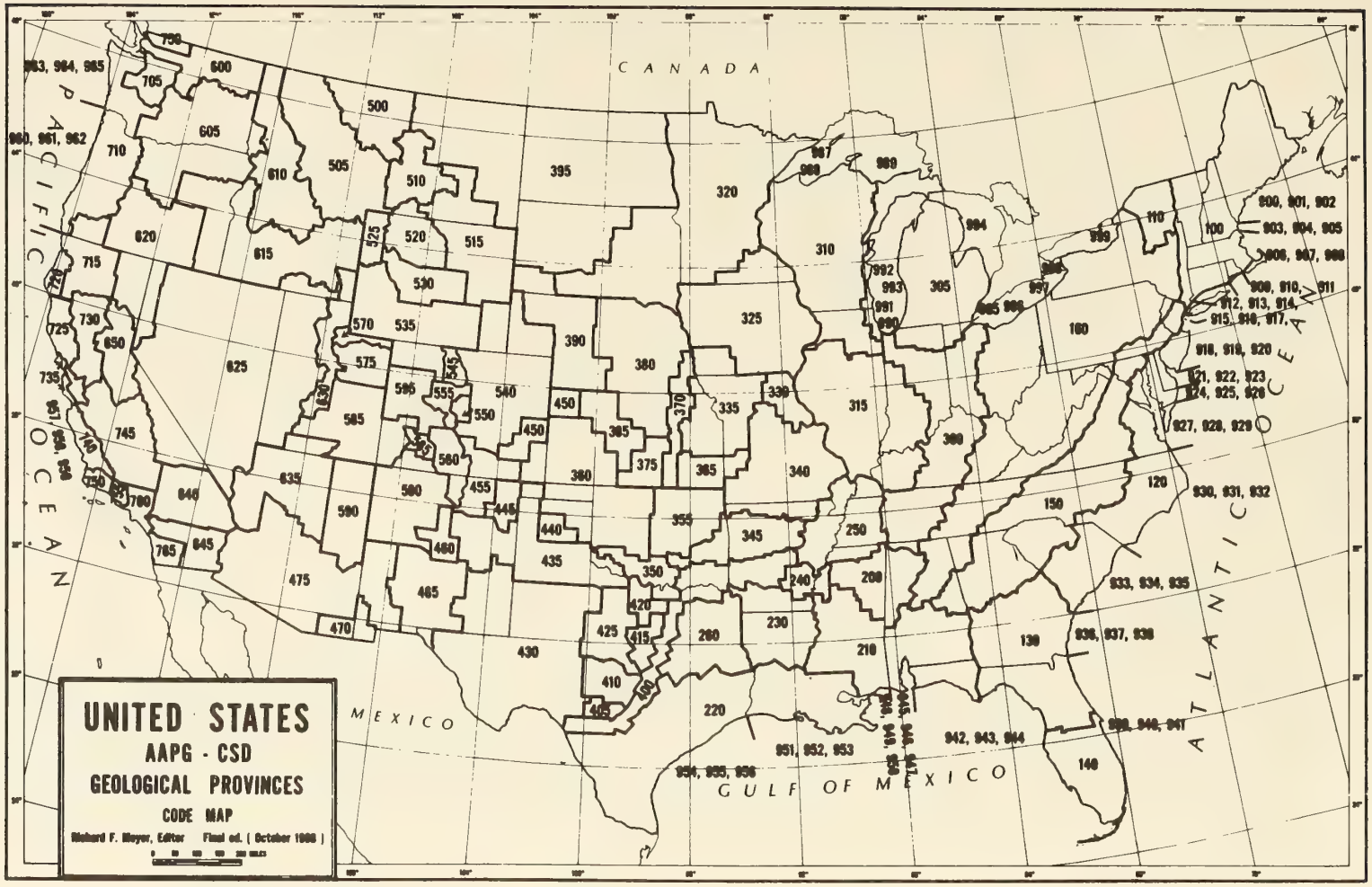

FIGURE 1. - Geologic provinces of the United States.

Code	Province
100	New England Province
110	Adirondack Uplift
120	Atlantic Coast Basin
130	South Georgia-North Florida Sedimentary Province
140	South Florida Province
150	Piedmont-Blue Ridge Province
160	Appalachian Basin
200	Warrior Basin
210	Mid-Gulf Coast Basin
220	Gulf Coast Basin
230	Arkla Basin
240	Desha Basin
250	Upper Mississippi Embayment
260	East Texas Basin
300	Cincinnati Arch
305	Michigan Basin
310	Wisconsin Arch
315	Illinois Basin
320	Sioux Uplift
325	Iowa Shelf
330	Lincoln Anticline
335	Forest City Basin
340	Ozark Uplift
345	Arkoma Basin
350	South Oklahoma Folded Belt Province
355	Chautauqua Platform
360	Anadarko Basin
365	Cherokee Basin
370	Nemaha Anticline
375	Sedgwick Basin
380	Salina Basin
385	Central Kansas Uplift
390	Chadron Arch
395	Williston Basin
400	Ouachita Tectonic Belt Province
405	Kerr Basin
410	Llano Uplift
415	Strawn Basin
420	Fort Worth Syncline
425	Bend Arch
430	Permian Basin
435	Palo Duro Basin
440	Amarillo Arch
445	Sierra Grande Uplift
450	Las Animas Arch
455	Las Vegas-Raton Basin
460	Estancia Basin
465	Orogrande Basin
470	Pedregosa Basin
475	Basin-and-Range Province

Code	Province
500	Sweetgrass Arch
505	Montana Folded Belt Province
510	Central Montana Uplift
515	Powder River Basin
520	Big Horn Basin
525	Yellowstone Province
530	Wind River Basin
535	Green River Basin
540	Denver Basin
545	North Park Basin
550	South Park Basin
555	Eagle Basin
560	San Luis Basin
565	San Juan Mountain Province
570	Uinta Uplift
575	Uinta Basin
580	San Juan Basin
585	Paradox Basin
590	Black Mesa Basin
595	Piceance Basin
600	Northern Cascade Range--Okanagan Province
605	Eastern Columbia Basin
610	Idaho Mountains Province
615	Snake River Basin
620	Southern Oregon Basin
625	Great Basin Province
630	Wasatch Uplift
635	Plateau Sedimentary Province
640	Mojave Basin
645	Salton Basin
650	Sierra Nevada Province
700	Bellingham Basin
705	Puget Sound Province
710	Western Columbia Basin
715	Klamath Mountains Province
720	Eel River Basin
725	Northern Coast Range Province
730	Sacramento Basin
735	Santa Cruz Basin
740	Coastal Basins
745	San Joaquin Basin
750	Santa Maria Basin
755	Ventura Basin
760	Los Angeles Basin
765	Capistrano Basin

Code	Province
800	Heceta Island Area
805	Keku Islands Area
810	Gulf of Alaska Basin
815	Copper River Basin
820	Cook Inlet Basin
830	Kandik Province
835	Kobuk Province
840	Koyukuk Province
845	Bristol Bay Basin
850	Bethel Basin
855	Norton Basin
860	Selawik Basin
863	Yukon Flats Basin
865	Lower Tanana Basin
867	Middle Tanana Basin
870	Upper Tanana Basin
873	Galena Basin
875	Innoko Basin
877	Minchumina Basin
880	Holitna Basin
885	Arctic Foothills Province
890	Arctic Slope Basin
900	Maine Atlantic offshore--general
901	Maine Atlantic offshore--State
902	Maine Atlantic offshore--Federal
903	New Hampshire Atlantic offshore--general
904	New Hampshire Atlantic offshore--State
905	New Hampshire Atlantic offshore--Federal
906	Massachusetts Atlantic offshore--general
907	Massachusetts Atlantic offshore--State
908	Massachusetts Atlantic offshore--Federal
909	Rhode Island Atlantic offshore--general
910	Rhode Island Atlantic offshore--State
911	Rhode Island Atlantic offshore--Federal
912	Connecticut Atlantic offshore--general
913	Connecticut Atlantic offshore--State
914	Connecticut Atlantic offshore--Federal
915	New York Atlantic offshore--general
916	New York Atlantic offshore--State
917	New York Atlantic offshore--Federal
918	New Jersey Atlantic offshore--general
919	New Jersey Atlantic offshore--State
920	New Jersey Atlantic offshore--Federal
921	Delaware Atlantic offshore--general
922	Delaware Atlantic offshore--State
923	Delaware Atlantic offshore--Federal
924	Maryland Atlantic offshore--general
925	Maryland Atlantic offshore--State
926	Maryland Atlantic offshore--Federal
927	Virginia Atlantic offshore--general
928	Virginia Atlantic offshore--State
929	Virginia Atlantic offshore--Federal

Code	Province
930	North Carolina Atlantic offshore--general
931	North Carolina Atlantic offshore--State
932	North Carolina Atlantic offshore--Federal
933	South Carolina Atlantic offshore--general
934	South Carolina Atlantic offshore--State
935	South Carolina Atlantic offshore--Federal
936	Georgia Atlantic offshore--general
937	Georgia Atlantic offshore--State
938	Georgia Atlantic offshore--Federal
939	Florida Atlantic offshore--general
940	Florida Atlantic offshore--State
941	Florida Atlantic offshore--Federal
942	Florida Gulf of Mexico offshore--general
943	Florida Gulf of Mexico offshore--State
944	Florida Gulf of Mexico offshore--Federal
945	Alabama Gulf of Mexico offshore--general
946	Alabama Gulf of Mexico offshore--State
947	Alabama Gulf of Mexico offshore--Federal
948	Mississippi Gulf of Mexico offshore--general
949	Mississippi Gulf of Mexico offshore--State
950	Mississippi Gulf of Mexico offshore--Federal
951	Louisiana Gulf of Mexico offshore--general
952	Louisiana Gulf of Mexico offshore-State
953	Louisiana Gulf of Mexico offshore--Federal
954	Texas Gulf of Mexico offshore--general
955	Texas Gulf of Mexico offshore--State
956	Texas Gulf of Mexico offshore--Federal
957	California Pacific offshore--general
958	California Pacific offshore--State
959	California Pacific offshore--Federal
960	Oregon Pacific offshore--general
961	Oregon Pacific offshore--State
962	Oregon Pacific offshore--Federal
963	Washington Pacific offshore--general
964	Washington Pacific offshore--State
965	Washington Pacific offshore--Federal
972	Alaska Arctic offshore--general
973	Alaska Arctic offshore--State
974	Alaska Arctic offshore--Federal
975	Alaska Bering Sea offshore--general
976	Alaska Bering Sea offshore--State
977	Alaska Bering Sea offshore--Federal
978	Alaska Pacific offshore--general
979	Alaska Pacific offshore--State
980	Alaska Pacific offshore--Federal
987	Minnesota Lake Superior offshore
988	Wisconsin Lake Superior offshore
989	Michigan Lake Superior offshore
990	Indiana Lake Michigan offshore
991	Illinois Lake Michigan offshore
992	Wisconsin Lake Michigan offshore
993	Michigan Lake Michigan offshore
994	Michigan Lake Huron offshore

Code	Province
995	Michigan Lake Erie offshore
996	Ohio Lake Erie offshore
997	Pennsylvania Lake Erie offshore
998	New York Lake Erie offshore
999	New York Lake Ontario offshore

TABLES

The following tables include the results of analyses and related source data from gas samples, which are divided into four groups as follows:

Table 1. - Samples from gas and oil wells in the United States.

Table 2. - Samples from pipelines in the United States.

Table 3. - Samples from gas and oil wells in foreign countries.

Table 4. - Samples from pipelines in foreign countries.

The following list indicates the sources of the samples listed in the tables:

Source	Number of samples	Tables	Source	Number of samples	Tables
Alabama.....	11	1	New York.....	1	1
Alaska.....	7	1, 2	North Dakota.....	8	1
Arkansas.....	14	1, 2	Ohio.....	1	2
California.....	2	1	Oklahoma.....	72	1, 2
Colorado.....	37	1, 2	Pennsylvania.....	1	1
Illinois.....	1	1	Tennessee.....	2	1
Indiana.....	3	1	Texas.....	45	1, 2
Kansas.....	51	1, 2	Utah.....	9	1
Kentucky.....	5	1	Virginia.....	1	1
Louisiana.....	15	1	West Virginia.....	5	1, 2
Michigan.....	2	1	Wyoming.....	25	1
Mississippi.....	8	1			
Missouri.....	1	1	Canada.....	1	3
Montana.....	3	1	Thailand.....	2	4
New Mexico.....	16	1, 2			

All components of the analyses in the tables are reported to the nearest 0.1 pct, except helium, which is reported to the nearest 0.01 pct. The word "trace" is used to denote quantities of helium of less than 0.005 pct and quantities of other components of less than 0.05 pct.

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 1 SAMPLE 16747	INDEX 2 SAMPLE 17143	INDEX 3 SAMPLE 17087
STATE	ALABAMA	ALABAMA	ALABAMA
COUNTY	BALDWIN	BALDWIN	BALDWIN
FIELD	FOLEY	FOLEY	WEEKS BAY S
WELL NAME	ROSE WEEKS 7-2 NO. 1	PAUL KAISER NO. 1	S. C. LIPSCOMB UNIT 7-9 NO.1
LOCATION	SEC. 7, T8S, R3E	SEC. 6, T8S, R4E	SEC. 7, T8S, R3E
OWNER	AMOCO PRODUCTION CO. (USA)	CLAYTON W. WILLIAMS, JR.	AMOCO PRODUCTION CO. (USA)
COMPLETED	12/12/80	12/--/82	03/--/83
SAMPLED	12/--/82	12/02/83	10/--/83
FORMATION	NOT GIVEN	MIOC-SAND	MIOC-AMOS SAND
GEOLOGIC PROVINCE CODE	210	210	210
DEPTH, FEET	1757	1688	1766
WELLHEAD PRESSURE,PSIG	790	750	1040
OPEN FLOW, MCFD	2600	704	625
COMPONENT, MOLE PCT			
METHANE	97.4	96.7	97.8
ETHANE	0.1	0.1	0.1
PROPANE	TRACE	TRACE	TRACE
N-BUTANE	TRACE	0.0	0.0
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	TRACE	0.0	0.0
ISOPENTANE	0.0	0.0	0.0
CYCLOPENTANE	TRACE	0.0	0.0
HEXANES PLUS	0.1	0.0	0.0
NITROGEN	1.9	3.2	1.9
OXYGEN	TRACE	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.0	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.0	0.1
HELIUM	0.01	0.01	0.01
HEATING VALUE*	994	981	993
SPECIFIC GRAVITY	0.564	0.568	0.563

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 4 SAMPLE 17019	INDEX 5 SAMPLE 16771	INDEX 6 SAMPLE 17135
STATE	ALABAMA	ALABAMA	ALABAMA
COUNTY	BLOUNT	FAYETTE	MOBILE
FIELD	WILDCAT	MUSGROVE CREEK	CHUNCHULA
WELL NAME	E. J. MARTIN NO. 30-6	MADISON NO. 29-13	M. V. KELLY NO. 10-3
LOCATION	SEC. 30, T13S, R3W	SEC. 29, T15S, R11W	SEC. 10, T1S, R2W
OWNER	J. MANLEY DENTON	HOWELL PETROLEUM CORP.	UNION OIL CO. OF CALIFORNIA
COMPLETED	08/20/82	09/20/82	06/22/83
SAMPLED	08/19/83	02/15/83	11/10/83
FORMATION	MISS-HARTSELLE	MISS-CARTER	JURA-SMACKOVER
GEOLOGIC PROVINCE CODE	160	200	210
DEPTH, FEET	1180	2713	18466
WELLHEAD PRESSURE,PSIG	400	1050	2400
OPEN FLOW, MCFD	140	935	700
COMPONENT, MOLE PCT			
METHANE	92.4	95.1	62.6
ETHANE	2.4	2.5	13.1
PROPANE	1.1	0.3	6.6
N-BUTANE	0.5	0.1	2.0
ISOBUTANE	0.2	0.0	1.6
N-PENTANE	0.1	TRACE	0.7
ISOPENTANE	0.2	TRACE	0.3
CYCLOPENTANE	TRACE	TRACE	0.1
HEXANES PLUS	0.1	0.1	0.4
NITROGEN	2.3	1.3	10.7
OXYGEN	0.1	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.4	0.3	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.2	1.6
HELIUM	0.13	0.11	0.11
HEATING VALUE*	1050	1025	1228
SPECIFIC GRAVITY	0.605	0.579	0.829

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 7 SAMPLE 17136	INDEX 8 SAMPLE 17005	INDEX 9 SAMPLE 17004
STATE	ALABAMA	ALABAMA	ALABAMA
COUNTY	MOBILE	TUSCALOOSA	TUSCALOOSA
FIELD	COLD CREEK	LEXINGTON	LEXINGTON
WELL NAME	NEWMAN NO. 9-11	I A HOLMAN LUMBER NO. 10-7	TIERCE NO. 12-3
LOCATION	SEC. 9, T1S, R1W	SEC. 10, T18S, R11W	SEC. 12, T18S, R11W
OWNER	UNION OIL CO. OF CALIFORNIA	CARLESS RESOURCES INC.	CARLESS RESOURCES INC.
COMPLETED	04/15/78	09/30/82	03/22/83
SAMPLED	11/10/83	08/05/83	08/05/83
FORMATION	JURA-SMACKOVER	MISS-MILLERELLA	MISS-CARTER
GEOLOGIC PROVINCE CODE	210	200	200
DEPTH, FEET	18425	3915	3994
WELLHEAD PRESSURE,PSIG	943	1420	1260
OPEN FLOW, MCFD	324	420	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	42.1	76.9	86.9
ETHANE	15.5	9.9	6.8
PROPANE	12.7	3.7	1.4
N-BUTANE	5.3	0.9	0.6
ISOBUTANE	3.9	0.3	0.3
N-PENTANE	1.6	0.2	0.1
ISOPENTANE	1.7	0.3	0.4
CYCLOPENTANE	0.3	TRACE	0.1
HEXANES PLUS	1.1	0.1	0.1
NITROGEN	13.6	6.8	2.6
OXYGEN	TRACE	0.1	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.3	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	2.1	0.3	0.2
HELIUM	0.15	0.18	0.16
HEATING VALUE*	1553	1120	1100
SPECIFIC GRAVITY	1.071	0.700	0.641

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 10 SAMPLE 17003	INDEX 11 SAMPLE 17002	INDEX 12 SAMPLE 16789
STATE	ALABAMA	ALABAMA	ALASKA
COUNTY	TUSCALOOSA	TUSCALOOSA	N SLOPE-NPR4
FIELD	LEXINGTON	NOT GIVEN	SOUTH BARROW EAST
WELL NAME	REPUBLIC STEEL NO. 23-7	SWINDLE NO. 26-A	BARROW S NO. 18
LOCATION	SEC. 23, T17S, R11W	SEC. 26, T18S, R11W	NOT GIVEN
OWNER	CARLESS RESOURCES INC.	CARLESS RESOURCES INC.	U.S. GEOLOGICAL SURVEY
COMPLETED	06/05/81	05/26/83	10/14/80
SAMPLED	08/05/83	08/05/83	03/01/83
FORMATION	MISS-COATS	MISS-TUSCUMBIA	JURA-BARROW SAND L
GEOLOGIC PROVINCE CODE	200	200	972
DEPTH, FEET	3078	4400	2052
WELLHEAD PRESSURE,PSIG	1250	1580	845
OPEN FLOW, MCFD	NOT GIVEN	NOT GIVEN	1400
COMPONENT, MOLE PCT			
METHANE	91.1	83.6	94.9
ETHANE	2.8	7.3	0.5
PROPANE	0.9	1.6	TRACE
N-BUTANE	0.4	0.5	0.2
ISOBUTANE	0.2	0.2	0.0
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.2	0.3	0.1
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.1	0.1	TRACE
NITROGEN	3.3	5.4	3.6
OXYGEN	0.1	0.2	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.4	0.3	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.3	0.2
HELIUM	0.22	0.10	0.08
HEATING VALUE*	1040	1066	986
SPECIFIC GRAVITY	0.609	0.652	0.579

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 13 SAMPLE 16786	INDEX 14 SAMPLE 16787	INDEX 15 SAMPLE 16858
STATE	ALASKA	ALASKA	ALASKA
COUNTY	N SLOPE-NPR4	N SLOPE-NPR4	N SLOPE-NPR4
FIELD	SOUTH BARROW EAST	SOUTH BARROW EAST	SOUTH BARROW EAST
WELL NAME	BARROW S NO. 14	BARROW S NO. 15	NO. 19
LOCATION	SEC. 25, T22N, R17W	NOT GIVEN	SEC. 23, T22N, R17E
OWNER	U.S. GEOLOGICAL SURVEY	U.S. GEOLOGICAL SURVEY	U.S. GEOLOGICAL SURVEY
COMPLETED	03/03/77	09/18/80	05/16/78
SAMPLED	03/01/83	03/01/83	03/29/83
FORMATION	JURA-BARROW SAND L	JURA-BARROW SAND U	JURA-BARROW SAND L
GEOLOGIC PROVINCE CODE	972	972	972
DEPTH, FEET	2057	2110	1988
WELLHEAD PRESSURE,PSIG	855	905	850
OPEN FLOW, MCFD	2300	1700	7700
COMPONENT, MOLE PCT			
METHANE	96.4	97.8	89.1
ETHANE	0.4	0.9	0.7
PROPANE	TRACE	0.1	0.0
N-BUTANE	0.2	0.0	0.1
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	0.1	0.0	0.0
ISOPENTANE	0.1	0.0	0.1
CYCLOPENTANE	TRACE	0.0	TRACE
HEXANES PLUS	0.1	0.0	TRACE
NITROGEN	2.2	0.8	9.0
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.2	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.1	0.2
HELIUM	0.05	0.03	0.43
HEATING VALUE*	1005	1010	923
SPECIFIC GRAVITY	0.575	0.563	0.597

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 16 SAMPLE 16790	INDEX 17 SAMPLE 16935	INDEX 18 SAMPLE 16934
STATE	ALASKA	ARKANSAS	ARKANSAS
COUNTY	N SLOPE-NPR4	CONWAY	CONWAY
FIELD	SOUTH BARROW EAST	OLD HICKORY	OLD HICKORY
WELL NAME	BARROW S NO. 12	MASSINGILL NO. 1-15	MASSINGILL NO. 1-15
LOCATION	SEC. 26, T22N, R17W	SEC. 15, T8N, R17W	SEC. 15, T8N, R17W
OWNER	U.S. GEOLOGICAL SURVEY	HAWKINS OIL & GAS, INC.	HAWKINS OIL & GAS, INC.
COMPLETED	04/05/84	09/09/82	09/09/82
SAMPLED	03/01/83	05/15/83	05/15/83
FORMATION	JURA-BARROW SAND L	PENN-MCGUIRE	PENN-BARTON A
GEOLOGIC PROVINCE CODE	972	345	345
DEPTH, FEET	2031	2016	2678
WELLHEAD PRESSURE,PSIG	855	260	750
OPEN FLOW, MCFD	360	570	3420
COMPONENT, MOLE PCT			
METHANE	89.0	84.5	89.6
ETHANE	0.6	0.5	0.6
PROPANE	0.0	TRACE	TRACE
N-BUTANE	0.2	0.0	0.0
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	0.1	0.0	0.0
ISOPENTANE	0.1	0.0	0.0
CYCLOPENTANE	TRACE	0.0	0.0
HEXANES PLUS	0.1	0.0	0.0
NITROGEN	6.8	13.3	8.1
OXYGEN	0.1	0.9	0.4
ARGON	TRACE	0.1	0.1
HYDROGEN	0.2	0.2	0.5
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	TRACE	0.3
HELIUM	2.54	0.44	0.45
HEATING VALUE*	933	866	920
SPECIFIC GRAVITY	0.587	0.614	0.593

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 19 SAMPLE 16897	INDEX 20 SAMPLE 16760	INDEX 21 SAMPLE 16759
STATE	ARKANSAS	ARKANSAS	ARKANSAS
COUNTY	CRAWFORD	CRAWFORD	CRAWFORD
FIELD	RUDY	WILDCAT	WILDCAT
WELL NAME	PHILLIPS NO. 1-30	BROWN NO. 1-21	BROWN NO. 1-21
LOCATION	SEC. 30, T10N, R31W	SEC. 21, T10N, R32W	SEC. 21, T10N, R32W
OWNER	BROCK HYDROCARBONS, INC.	CARLYLE PETROLEUM CO.	CARLYLE PETROLEUM CO.
COMPLETED	12/15/82	02/03/83	02/03/83
SAMPLED	04/29/83	02/03/83	02/03/83
FORMATION	PENN-DUNN C	PENN-HALE L	MISS-BOONE
GEOLOGIC PROVINCE CODE	345	345	345
DEPTH, FEET	1586	2148	2310
WELLHEAD PRESSURE,PSIG	900	NOT GIVEN	995
OPEN FLOW, MCFD	1664	3840	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	90.1	94.1	85.6
ETHANE	1.9	2.7	2.2
PROPANE	0.3	0.4	0.4
N-BUTANE	0.1	0.1	0.1
ISOBUTANE	TRACE	0.1	0.1
N-PENTANE	TRACE	0.1	TRACE
ISOPENTANE	TRACE	0.0	0.1
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	TRACE	0.1
NITROGEN	6.7	1.9	6.0
OXYGEN	0.0	TRACE	TRACE
ARGON	0.1	TRACE	0.1
HYDROGEN	0.3	0.4	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	TRACE	0.6
HELIUM	0.39	0.19	0.30
HEATING VALUE*	964	1024	975
SPECIFIC GRAVITY	0.599	0.582	0.605

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 22 SAMPLE 16871	INDEX 23 SAMPLE 17065	INDEX 24 SAMPLE 16953
STATE	ARKANSAS	ARKANSAS	ARKANSAS
COUNTY	FRANKLIN	JOHNSON	JOHNSON
FIELD	ALTUS	KNOXVILLE	ROSS
WELL NAME	BESS O'KANE NO. 1-36	BILLIE WITTENAUER NO. 1	HARGRAVE NO. 2-8
LOCATION	SEC. 36, T9N, R26W	SEC. 15, T8N, R22W	SEC. 8, T9N, R22W
OWNER	GULF OIL EXPL. & PROD. CO.	SUN EXPL. & PROD. CO.	HAWKINS OIL & GAS, INC.
COMPLETED	07/27/82	02/02/83	05/17/83
SAMPLED	03/09/83	09/19/83	05/17/83
FORMATION	PENN-TACKETT	PENN-TACKETT	PENN-HALE
GEOLOGIC PROVINCE CODE	345	345	345
DEPTH, FEET	3110	3537	6316
WELLHEAD PRESSURE,PSIG	1098	366	1880
OPEN FLOW, MCFD	5981	1813	3273
COMPONENT, MOLE PCT			
METHANE	97.7	92.5	96.7
ETHANE	0.9	0.9	1.3
PROPANE	0.1	0.1	0.1
N-BUTANE	0.0	0.0	0.0
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	0.0	0.0	0.0
ISOPENTANE	0.0	0.0	0.0
CYCLOPENTANE	0.0	0.0	0.0
HEXANES PLUS	0.0	0.0	0.0
NITROGEN	0.6	5.6	0.5
OXYGEN	0.1	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	0.6	0.4
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.1	0.9
HELIUM	0.13	0.17	0.11
HEATING VALUE*	1009	958	1007
SPECIFIC GRAVITY	0.563	0.580	0.570

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 25 SAMPLE 16878	INDEX 26 SAMPLE 16770	INDEX 27 SAMPLE 16936
STATE	ARKANSAS	ARKANSAS	CALIFORNIA
COUNTY	JOHNSON	POPE	SOLANO
FIELD	SCRANTON	ROSS	DIXON CREEK
WELL NAME	MC ALESTER FUEL NO. 2-31	HOGREFE NO. 2	SCHROEDER UNIT NO. 1
LOCATION	SEC. 31, T9N, R24W	SEC. 22, T9N, R21W	SEC. 9, T7N, R1E, MDB&M
OWNER	GULF OIL EXPL. & PROD. CO.	HILLIARD OIL & GAS, INC.	HILLIARD OIL & GAS, INC.
COMPLETED	11/22/82	10/08/82	12/29/82
SAMPLED	03/09/83	02/14/83	03/31/83
FORMATION	PENN-HALE	PENN-TACKETT SAND	CRET-WINTERS
GEOLOGIC PROVINCE CODE	345	345	730
DEPTH, FEET	6538	2400	6326
WELLHEAD PRESSURE,PSIG	1382	630	2410
OPEN FLOW, MCFD	6818	8300	3536
COMPONENT, MOLE PCT			
METHANE	95.5	97.8	87.8
ETHANE	1.2	1.1	3.2
PROPANE	0.1	0.1	1.3
N-BUTANE	0.0	0.0	0.3
ISOBUTANE	0.0	0.0	0.2
N-PENTANE	0.0	0.0	0.1
ISOPENTANE	0.0	0.0	0.2
CYCLOPENTANE	0.0	0.0	0.1
HEXANES PLUS	0.0	0.0	0.1
NITROGEN	0.5	0.4	6.3
OXYGEN	TRACE	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.4	0.4	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	2.1	0.1	0.1
HELIUM	0.09	0.10	0.01
HEATING VALUE*	993	1014	1020
SPECIFIC GRAVITY	0.581	0.561	0.626

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 28 SAMPLE 16999	INDEX 29 SAMPLE 16768	INDEX 30 SAMPLE 16748
STATE	CALIFORNIA	COLORADO	COLORADO
COUNTY	SUTTER	BOULDER	CHEYENNE
FIELD	NOT GIVEN	BOULDER VALLEY	WILDCAT
WELL NAME	O.P.I. MC LURE NO. 1-5	FUTHEY NO. 2	AMOCO-CHAMPLIN 558-A-1
LOCATION	SEC. 5, T14N, R2E	SEC. 25, T1N, R69W	SEC. 17, T12S, R44W
OWNER	NATURAL GAS CORP. OF CALIF.	CENTENNIAL PETROLEUM, INC.	AMOCO PRODUCTION CO. (USA)
COMPLETED	--/--/82	07/26/82	NOT GIVEN
SAMPLED	08/--/83	02/10/83	01/06/83
FORMATION	CRET-F ZONE	CRET-J SAND	PENN-MORROW
GEOLOGIC PROVINCE CODE	730	540	450
DEPTH, FEET	6082	8368	5432
WELLHEAD PRESSURE,PSIG	2420	700	690
OPEN FLOW, MCFD	1463	200	2010
COMPONENT, MOLE PCT			
METHANE	93.4	81.6	22.3
ETHANE	0.2	9.6	2.2
PROPANE	TRACE	2.4	1.9
N-BUTANE	0.0	0.5	1.1
ISOBUTANE	0.0	0.6	0.5
N-PENTANE	0.0	0.1	0.4
ISOPENTANE	0.0	0.4	0.5
CYCLOPENTANE	0.0	0.1	0.1
HEXANES PLUS	0.0	0.3	0.3
NITROGEN	5.9	0.5	64.6
OXYGEN	0.1	0.0	0.3
ARGON	TRACE	TRACE	0.4
HYDROGEN	0.3	0.3	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	3.5	0.7
HELIUM	TRACE	0.02	4.81
HEATING VALUE*	951	1139	427
SPECIFIC GRAVITY	0.580	0.696	0.894

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 31 SAMPLE 16960	INDEX 32 SAMPLE 17025	INDEX 33 SAMPLE 16743
STATE	COLORADO	COLORADO	COLORADO
COUNTY	DOLORES	GARFIELD	GARFIELD
FIELD	PAPOOSE CANYON	COLUMBINE SPGS.(BAXTER PASS)	DEREQUE
WELL NAME	DUNCAN NO. 44-7	FED. NO. 16-2-5S-104	SPEARS NO. 2-36
LOCATION	SEC. 7, T39N, R19W	SEC. 2, T5S, R104W	SEC. 36, T7S, R99W
OWNER	RAYMOND T. DUNCAN	COSEKA RESOURCES(U.S.A.)LTD.	COORS ENERGY CO.
COMPLETED	05/27/83	08/--/83	01/05/83
SAMPLED	05/27/83	08/29/83	01/05/83
FORMATION	PENN-DESERT CREEK	CRET-MESA VERDE	CRET-DAKOTA
GEOLOGIC PROVINCE CODE	585	595	595
DEPTH, FEET	5900	NOT GIVEN	8309
WELLHEAD PRESSURE,PSIG	NOT GIVEN	200	NOT GIVEN
OPEN FLOW, MCFD	175	300	230
COMPONENT, MOLE PCT			
METHANE	63.1	94.6	94.2
ETHANE	17.7	2.2	0.3
PROPANE	9.6	0.5	TRACE
N-BUTANE	3.0	0.1	TRACE
ISOBUTANE	1.7	0.2	TRACE
N-PENTANE	0.4	TRACE	TRACE
ISOPENTANE	1.4	0.1	0.0
CYCLOPENTANE	0.2	TRACE	0.1
HEXANES PLUS	0.5	0.1	0.1
NITROGEN	1.8	1.7	0.7
OXYGEN	0.1	0.1	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.3	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	0.2	4.2
HELIUM	0.01	0.03	0.03
HEATING VALUE*	1475	1031	969
SPECIFIC GRAVITY	0.870	0.588	0.603

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 34 SAMPLE 16785	INDEX 35 SAMPLE 16993	INDEX 36 SAMPLE 16992
STATE	COLORADO	COLORADO	COLORADO
COUNTY	HUERFANO	HUERFANO	HUERFANO
FIELD	SHEEP MOUNTAIN	SHEEP MOUNTAIN	SHEEP MOUNTAIN
WELL NAME	NO. 1-22-H	NO. 2-10-0	NO. 3-15-B
LOCATION	SEC. 22, T27S, R70W	SEC. 15, T27S, R70W	SEC. 15, T27S, R70W
OWNER	ARCO OIL & GAS CO.	ARCO OIL & GAS CO.	ARCO OIL & GAS CO.
COMPLETED	02/--/83	07/12/82	06/03/82
SAMPLED	03/03/83	07/25/83	07/25/83
FORMATION	JURA-ENTRADA	JURA-ENTRADA	CRET-DAKOTA
GEOLOGIC PROVINCE CODE	455	455	455
DEPTH, FEET	5320	3975	2750
WELLHEAD PRESSURE,PSIG	NOT GIVEN	920	900
OPEN FLOW, MCFD	9800	20700	13000
COMPONENT, MOLE PCT			
METHANE	1.6	1.4	1.6
ETHANE	0.2	0.2	0.2
PROPANE	0.0	0.0	0.0
N-BUTANE	0.1	0.2	0.1
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	0.0	0.3	0.1
ISOPENTANE	0.1	0.0	0.0
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	TRACE	0.1	0.1
NITROGEN	1.3	1.0	1.1
OXYGEN	0.1	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	96.6	96.7	96.6
HELIUM	0.03	0.03	0.03
HEATING VALUE*	27	42	33
SPECIFIC GRAVITY	1.506	1.513	1.506

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 37 SAMPLE 16991	INDEX 38 SAMPLE 16990	INDEX 39 SAMPLE 16987
STATE	COLORADO	COLORADO	COLORADO
COUNTY	HUERFANO	HUERFANO	HUERFANO
FIELD	SHEEP MOUNTAIN	SHEEP MOUNTAIN	SHEEP MOUNTAIN
WELL NAME	NO. 1-15-C	NO. 5-15-F	NO. 3-4-O
LOCATION	SEC. 15, T27S, R70W	SEC. 15, T27S, R70W	SEC. 9, T27S, R70W
OWNER	ARCO OIL & GAS CO.	ARCO OIL & GAS CO.	ARCO OIL & GAS CO.
COMPLETED	05/20/82	09/29/82	NOT GIVEN
SAMPLED	07/25/83	07/25/83	07/18/83
FORMATION	JURA-ENTRADA	CRET-DAKOTA	CRET-DAKOTA
GEOLOGIC PROVINCE CODE	455	455	455
DEPTH, FEET	3480	3250	3222
WELLHEAD PRESSURE,PSIG	731	850	NOT GIVEN
OPEN FLOW, MCFD	11500	10600	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	1.4	1.6	1.5
ETHANE	0.2	0.2	0.2
PROPANE	0.0	0.1	TRACE
N-BUTANE	0.1	0.0	TRACE
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	0.1	0.0	TRACE
ISOPENTANE	0.0	0.0	0.0
CYCLOPENTANE	TRACE	0.0	TRACE
HEXANES PLUS	0.1	0.0	0.1
NITROGEN	1.0	1.1	1.2
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	97.0	97.0	96.8
HELIUM	0.03	0.03	0.03
HEATING VALUE*	31	22	24
SPECIFIC GRAVITY	1.510	1.506	1.505

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 40 SAMPLE 16985	INDEX 41 SAMPLE 16984	INDEX 42 SAMPLE 17047
STATE	COLORADO	COLORADO	COLORADO
COUNTY	HUERFANO	HUERFANO	HUERFANO
FIELD	SHEEP MOUNTAIN	SHEEP MOUNTAIN	SHEEP MOUNTAIN
WELL NAME	NO. 5-9-A	NO. 4-4-P	NO. 6-15-I
LOCATION	SEC. 9, T27S, R70W	SEC. 9, T27S, R70W	SEC. 15, T27S, R70W
OWNER	ARCO OIL & GAS CO.	ARCO OIL & GAS CO.	ARCO OIL & GAS CO.
COMPLETED	NOT GIVEN	NOT GIVEN	11/19/82
SAMPLED	07/18/83	07/18/83	09/02/83
FORMATION	JURA-ENTRADA	CRET-DAKOTA	CRET-DAKOTA
GEOLOGIC PROVINCE CODE	455	455	455
DEPTH, FEET	4000	3850	NOT GIVEN
WELLHEAD PRESSURE,PSIG	850	NOT GIVEN	NOT GIVEN
OPEN FLOW, MCFD	12300	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	1.4	1.6	1.5
ETHANE	0.2	0.2	0.2
PROPANE	TRACE	TRACE	0.1
N-BUTANE	TRACE	0.1	0.0
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	TRACE	0.1	0.0
ISOPENTANE	0.0	0.0	0.0
CYCLOPENTANE	TRACE	TRACE	0.0
HEXANES PLUS	0.1	TRACE	0.0
NITROGEN	1.2	1.3	1.2
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	96.9	96.6	96.9
HELIUM	0.03	0.03	TRACE
HEATING VALUE*	23	27	21
SPECIFIC GRAVITY	1.506	1.505	1.505

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 43 SAMPLE 16886	INDEX 44 SAMPLE 16882	INDEX 45 SAMPLE 16744
STATE	COLORADO	COLORADO	COLORADO
COUNTY	KIOWA	LA PLATA	MESA
FIELD	LEFT HAND	RED MESA	BRONCO FLATS
WELL NAME	WEAR TRUST NO. 1-20	WEST ALKALI GULCH NO. 1	U.S.A. NO. 1-18 JC
LOCATION	SEC. 20, T18S, R47W	SEC. 2, T33N, R13W	SEC. 18, T9S, R98W
OWNER	MURFIN DRILLING CO.	DAVIS OIL CO.	COORS ENERGY CO.
COMPLETED	04/21/83	09/21/82	01/05/83
SAMPLED	04/21/83	04/16/83	01/05/83
FORMATION	PENN-KEYES	PENN-DESERT CREEK	CRET-DAKOTA
GEOLOGIC PROVINCE CODE	450	580	595
DEPTH, FEET	5025	8470	6631
WELLHEAD PRESSURE,PSIG	180	2600	2750
OPEN FLOW, MCFD	1000	210	507
COMPONENT, MOLE PCT			
METHANE	58.4	95.8	82.8
ETHANE	8.5	1.3	9.7
PROPANE	4.2	0.3	2.8
N-BUTANE	1.6	0.2	0.6
ISOBUTANE	0.7	0.1	0.6
N-PENTANE	0.4	0.1	0.1
ISOPENTANE	0.8	0.1	0.3
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.2	0.1	0.2
NITROGEN	10.7	1.1	0.4
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	2.8	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	10.7	0.6	2.1
HELIUM	0.72	TRACE	0.02
HEATING VALUE*	1005	1026	1154
SPECIFIC GRAVITY	0.834	0.584	0.681

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 46 SAMPLE 16745	INDEX 47 SAMPLE 16765	INDEX 48 SAMPLE 16890
STATE	COLORADO	COLORADO	COLORADO
COUNTY	MESA	MOFFAT	PROWERS
FIELD	CAMEO	HIAWATHA E	BERRY PATCH
WELL NAME	U.S.A. NO. 1-5 MR	HIAWATHA DEEP NO. 2	KENDALL NO. 2-32
LOCATION	SEC. 5, T11S, R98W	SEC. 22, T12N, R100W	SEC. 32, T22S, R45W
OWNER	COORS ENERGY CO.	MOUNTAIN FUEL SUPPLY CO.	BIG FOUR PETROLEUM CO.
COMPLETED	01/06/83	09/20/82	06/10/82
SAMPLED	01/06/83	02/04/83	04/23/83
FORMATION	CRET-DAKOTA L	JURA-NUGGET	PENN-MORROW
GEOLOGIC PROVINCE CODE	595	535	360
DEPTH, FEET	4871	14478	4650
WELLHEAD PRESSURE,PSIG	1580	5559	1010
OPEN FLOW, MCFD	1000	2498	1450
COMPONENT, MOLE PCT			
METHANE	80.6	92.9	62.5
ETHANE	5.1	0.2	10.7
PROPANE	1.4	TRACE	5.6
N-BUTANE	0.3	0.0	1.4
ISOBUTANE	0.1	TRACE	0.5
N-PENTANE	0.1	TRACE	0.2
ISOPENTANE	0.1	TRACE	0.5
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.2	0.1	0.1
NITROGEN	10.6	1.0	17.0
OXYGEN	TRACE	0.1	TRACE
ARGON	0.1	TRACE	0.1
HYDROGEN	0.4	0.3	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	5.1	0.5
HELIUM	0.70	0.02	0.77
HEATING VALUE*	982	955	1070
SPECIFIC GRAVITY	0.652	0.611	0.780

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 49 SAMPLE 16876	INDEX 50 SAMPLE 17028	INDEX 51 SAMPLE 16961
STATE	COLORADO	COLORADO	COLORADO
COUNTY	PROWERS	RIO BLANCO	RIO BLANCO
FIELD	CLYDE	CATHEDRAL	DOUGLAS CREEK N
WELL NAME	CLARK NO. 1-15	SHAMROCK FED. NO. 1-5	FORK UNIT NO. 12-22-1-2
LOCATION	SEC. 15, T22S, R45W	SEC. 5, T3S, R100W	SEC. 22, T1S, R102W
OWNER	MARLIN OIL CO.	SOUTHLAND ROYALTY CO.	CHANDLER ASSOCIATES, INC.
COMPLETED	01/28/81	06/03/82	06/01/83
SAMPLED	04/11/83	08/25/83	06/01/83
FORMATION	PENN-MORROW	CRET-MANCOS B	CRET-EMERY
GEOLOGIC PROVINCE CODE	360	595	595
DEPTH, FEET	4694	3900	2564
WELLHEAD PRESSURE,PSIG	NOT GIVEN	327	200
OPEN FLOW, MCFD	NOT GIVEN	529	491
COMPONENT, MOLE PCT			
METHANE	60.1	88.1	81.7
ETHANE	14.7	4.5	7.7
PROPANE	7.8	2.0	4.4
N-BUTANE	2.0	0.7	1.6
ISOBUTANE	0.6	0.3	0.8
N-PENTANE	0.3	0.1	0.3
ISOPENTANE	0.6	0.5	0.8
CYCLOPENTANE	TRACE	0.1	0.2
HEXANES PLUS	0.1	0.2	0.3
NITROGEN	12.3	0.3	1.0
OXYGEN	TRACE	TRACE	TRACE
ARGON	0.1	TRACE	TRACE
HYDROGEN	0.2	0.3	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.7	2.9	0.9
HELIUM	0.55	0.01	0.06
HEATING VALUE*	1206	1099	1231
SPECIFIC GRAVITY	0.820	0.658	0.717

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 52 SAMPLE 17006	INDEX 53 SAMPLE 17024	INDEX 54 SAMPLE 17016
STATE	COLORADO	COLORADO	COLORADO
COUNTY	RIO BLANCO	RIO BLANCO	WASHINGTON
FIELD	PHILADELPHIA CREEK	TEXAS MOUNTAIN	DE NOVA
WELL NAME	FED. NO. 35	TEXAS MOUNTAIN FED. NO. 1	PRICE NO. 4-18
LOCATION	SEC. 1, T2S, R101W	SEC. 17, T3S, R102W	SEC. 18, T2S, R49W
OWNER	NORTHWEST EXPLORATION CO.	TXO PRODUCTION CORP.	STELBAR OIL CORP.
COMPLETED	01/24/83	11/24/81	11/26/82
SAMPLED	08/--/83	08/25/83	08/15/83
FORMATION	CRET-MANCOS B	CRET-DAKOTA	CRET-NIOBRARA
GEOLOGIC PROVINCE CODE	595	595	540
DEPTH, FEET	3242	6665	3051
WELLHEAD PRESSURE,PSIG	206	1400	700
OPEN FLOW, MCFD	960	721	685
COMPONENT, MOLE PCT			
METHANE	91.1	81.5	94.2
ETHANE	3.2	6.0	0.8
PROPANE	1.8	2.2	0.5
N-BUTANE	0.9	0.6	0.2
ISOBUTANE	0.3	0.4	0.1
N-PENTANE	0.2	0.1	TRACE
ISOPENTANE	0.5	0.4	0.1
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.1	0.2	TRACE
NITROGEN	0.6	6.0	3.2
OXYGEN	0.1	1.1	0.0
ARGON	TRACE	0.1	TRACE
HYDROGEN	0.2	0.3	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.8	1.0	0.5
HELIUM	0.01	0.16	0.05
HEATING VALUE*	1107	1060	997
SPECIFIC GRAVITY	0.634	0.678	0.586

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 55 SAMPLE 16880	INDEX 56 SAMPLE 17017	INDEX 57 SAMPLE 16881
STATE	COLORADO	COLORADO	COLORADO
COUNTY	WASHINGTON	WASHINGTON	WASHINGTON
FIELD	DE NOVA	WHITE EAGLE	WHITE EAGLE
WELL NAME	MATHIES A NO. 2	MAGGARD NO. 4-11	MAGGARD A NO. 1
LOCATION	SEC. 5, T2S, R49W	SEC. 11, T2S, R50W	SEC. 2, T2S, R50W
OWNER	CITIES SERVICE CO.	STELBAR OIL CORP.	CITIES SERVICE CO.
COMPLETED	10/15/82	11/26/82	10/10/82
SAMPLED	04/18/83	08/15/83	04/18/83
FORMATION	CRET-NIOBRARA	CRET-NIOBRARA	CRET-NIOBRARA
GEOLOGIC PROVINCE CODE	540	540	540
DEPTH, FEET	2961	3023	2956
WELLHEAD PRESSURE,PSIG	620	690	610
OPEN FLOW, MCFD	973	885	346
COMPONENT, MOLE PCT			
METHANE	94.2	92.8	93.0
ETHANE	0.9	1.0	1.1
PROPANE	0.4	0.7	0.7
N-BUTANE	0.2	0.3	0.3
ISOBUTANE	TRACE	0.1	TRACE
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.1	0.1	0.2
CYCLOPENTANE	0.1	TRACE	0.1
HEXANES PLUS	0.1	TRACE	0.1
NITROGEN	3.3	3.8	3.7
OXYGEN	0.0	TRACE	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.3	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	0.5	0.4
HELIUM	0.05	0.05	0.05
HEATING VALUE*	1006	999	1012
SPECIFIC GRAVITY	0.591	0.594	0.599

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 58 SAMPLE 17044	INDEX 59 SAMPLE 16873	INDEX 60 SAMPLE 17045
STATE	COLORADO	COLORADO	COLORADO
COUNTY	YUMA	YUMA	YUMA
FIELD	BEECHER ISLAND	DUKE	PHUMA
WELL NAME	SCHOBE NO. 2-8	QUICK-PETERS NO. 23-1	SALVADOR NO. 1-10
LOCATION	SEC. 8, T3S, R43W	SEC. 23, T1S, R45W	SEC. 10, T5N, R46W
OWNER	MOUNTAIN PETROLEJM CORP.	UNIOIL	MOUNTAIN PETROLEUM CORP.
COMPLETED	07/24/82	05/20/82	11/06/82
SAMPLED	08/31/83	04/09/83	08/31/83
FORMATION	CRET-NIOBRARA	CRET-NIOBRARA	CRET-NIOBRARA
GEOLOGIC PROVINCE CODE	540	540	540
DEPTH, FEET	1799	2278	2665
WELLHEAD PRESSURE,PSIG	334	600	520
OPEN FLOW, MCFD	1526	1800	552
COMPONENT, MOLE PCT			
METHANE	94.0	92.8	92.3
ETHANE	1.2	1.0	1.1
PROPANE	0.4	0.5	0.4
N-BUTANE	0.1	0.2	0.2
ISOBUTANE	TRACE	0.1	TRACE
N-PENTANE	TRACE	0.1	0.1
ISOPENTANE	0.1	0.1	0.1
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	TRACE	0.1	TRACE
NITROGEN	3.0	4.2	3.5
OXYGEN	0.0	TRACE	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	0.2	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.8	0.7	1.8
HELIUM	0.06	0.09	0.06
HEATING VALUE*	993	995	981
SPECIFIC GRAVITY	0.586	0.599	0.600

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 61 SAMPLE 17018	INDEX 62 SAMPLE 16874	INDEX 63 SAMPLE 16972
STATE	COLORADO	COLORADO	ILLINOIS
COUNTY	YUMA	YUMA	PIKE
FIELD	WAGES	WILDCAT	GRIGGSVILLE W
WELL NAME	CLARK JOSH NO. 1-3	ALLISON NO. 9-1	SKINNER NO. 1
LOCATION	SEC. 3, T4N, R46W	SEC. 9, T1S, R45W	SEC. 17, T4S, R3W
OWNER	STELBAR OIL CORP.	UNIOIL	HOT TANKS, INC.
COMPLETED	06/11/80	08/21/82	10/05/82
SAMPLED	08/22/83	04/09/83	05/17/83
FORMATION	CRET-NIOBRARA	CRET-NIOBRARA	SILU-EDGEWOOD
GEOLOGIC PROVINCE CODE	540	540	315
DEPTH, FEET	2654	2340	333
WELLHEAD PRESSURE,PSIG	212	1050	103
OPEN FLOW, MCFD	708	171	1300
COMPONENT, MOLE PCT			
METHANE	94.3	90.6	95.4
ETHANE	0.9	0.9	0.1
PROPANE	0.2	0.5	0.1
N-BUTANE	0.1	0.2	0.0
ISOBUTANE	TRACE	0.1	0.0
N-PENTANE	TRACE	0.1	0.0
ISOPENTANE	0.1	0.1	0.0
CYCLOPENTANE	TRACE	TRACE	0.0
HEXANES PLUS	TRACE	0.1	0.0
NITROGEN	3.3	4.0	3.0
OXYGEN	0.1	TRACE	0.2
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.3	0.4	0.6
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	2.9	0.6
HELIUM	0.08	0.09	0.03
HEATING VALUE*	985	972	973
SPECIFIC GRAVITY	0.579	0.617	0.574

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 64 SAMPLE 17008	INDEX 65 SAMPLE 17007	INDEX 66 SAMPLE 17138
STATE	INDIANA	INDIANA	INDIANA
COUNTY	DUBOIS	DUBOIS	JAY
FIELD	BRETZVILLE	JOHNSBURG E	TRENTON
WELL NAME	L. WITTE & M. SCHAFER NO.1	J. SEIDL NO. 2	RONALD & JANICE GILLUM NO. 1
LOCATION	SEC. 6, T3S, R4W	SEC. 35, T3S, R5W	SEC. 23, T23N, R12E
OWNER	CITIZENS GAS & COKE UTILITY	CITIZENS GAS & COKE UTILITY	RONALD L. GILLUM
COMPLETED	11/09/81	10/05/81	07/29/83
SAMPLED	08/09/83	08/09/83	11/10/83
FORMATION	MISS-SALEM	MISS-SALEM	ORDO-TRENTON
GEOLOGIC PROVINCE CODE	315	315	300
DEPTH, FEET	1138	1508	962
WELLHEAD PRESSURE,PSIG	538	602	9
OPEN FLOW, MCFD	440	4600	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	85.0	71.3	64.1
ETHANE	5.3	5.5	13.5
PROPANE	2.0	2.5	8.7
N-BUTANE	0.7	0.7	3.1
ISOBUTANE	0.2	0.1	1.5
N-PENTANE	0.1	0.1	1.0
ISOPENTANE	0.2	0.3	1.1
CYCLOPENTANE	TRACE	0.1	0.2
HEXANES PLUS	0.1	0.1	0.7
NITROGEN	5.4	17.5	5.5
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	0.2	0.2
HYDROGEN SULFIDE**	TRACE	0.0	0.0
CARBON DIOXIDE	0.6	1.0	0.4
HELIUM	0.03	0.46	0.12
HEATING VALUE*	1057	939	1406
SPECIFIC GRAVITY	0.649	0.709	0.865

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 67 SAMPLE 17057	INDEX 68 SAMPLE 16978	INDEX 69 SAMPLE 17081
STATE	KANSAS	KANSAS	KANSAS
COUNTY	BARBER	BARBER	COMANCHE
FIELD	BLOOM N	SKINNER	WILDCAT
WELL NAME	MAC NO. 1	L. YOUNG NO. 1-18	V. L. SMITH NO. 1
LOCATION	SEC. 7, T32S, R11W	SEC. 18, T30S, R12W	SEC. 26, T31S, R17W
OWNER	BOWERS DRILLING CO.	F. G. HOLL	MAURICE L. BROWN CO.
COMPLETED	05/21/82	05/27/82	08/17/82
SAMPLED	09/10/83	06/--/83	09/08/83
FORMATION	MISS-	PENN-DOUGLAS SAND	MISS-
GEOLOGIC PROVINCE CODE	375	375	360
DEPTH, FEET	4284	3700	4921
WELLHEAD PRESSURE,PSIG	1500	1200	620
OPEN FLOW, MCFD	950	2086	310
COMPONENT, MOLE PCT			
METHANE	80.1	72.2	91.1
ETHANE	6.0	5.6	4.0
PROPANE	3.0	4.6	1.4
N-BUTANE	1.0	1.5	0.4
ISOBUTANE	0.4	0.5	0.2
N-PENTANE	0.2	0.3	0.1
ISOPENTANE	0.5	0.6	0.2
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.2	0.1	0.1
NITROGEN	7.5	13.7	2.0
OXYGEN	0.0	0.1	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	0.2	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.2	0.1
HELIUM	0.45	0.35	0.18
HEATING VALUE*	1089	1067	1069
SPECIFIC GRAVITY	0.684	0.737	0.613

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 70 SAMPLE 16872	INDEX 71 SAMPLE 16973	INDEX 72 SAMPLE 17118
STATE	KANSAS	KANSAS	KANSAS
COUNTY	EDWARDS	GREENWOOD	KINGMAN
FIELD	WAYNE W	FANCY S	BROADWAY
WELL NAME	WHITE NO. 2-1	LATHAM NO. 8	ZERGER NO. 1
LOCATION	SEC. 1, T24S, R18W	SEC. 12, T27S, R12E	SEC. 1, T28S, R5W
OWNER	F. G. HOLL	OSAGE DRILLING, INC.	VINCENT OIL CORP.
COMPLETED	09/01/82	02/02/83	10/01/82
SAMPLED	04/08/83	06/13/83	10/25/83
FORMATION	PENN-CONGLOMERATE	MISS-	MISS-
GEOLOGIC PROVINCE CODE	360	365	375
DEPTH, FEET	4372	1630	3800
WELLHEAD PRESSURE,PSIG	480	50	990
OPEN FLOW, MCFD	1340	1200	350
COMPONENT, MOLE PCT			
METHANE	78.7	82.7	78.6
ETHANE	4.0	0.4	7.1
PROPANE	1.5	0.2	3.3
N-BUTANE	0.5	0.1	1.1
ISOBUTANE	0.1	0.1	0.4
N-PENTANE	0.1	0.0	0.3
ISOPENTANE	0.3	0.1	0.2
CYCLOPENTANE	0.1	TRACE	0.1
HEXANES PLUS	0.1	0.1	0.2
NITROGEN	13.0	12.4	6.1
OXYGEN	TRACE	0.1	0.0
ARGON	0.1	0.1	TRACE
HYDROGEN	0.3	0.4	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	2.5	0.1
HELIUM	1.17	0.85	0.38
HEATING VALUE*	955	868	1095
SPECIFIC GRAVITY	0.660	0.637	0.694

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 73 SAMPLE 17082	INDEX 74 SAMPLE 16850	INDEX 75 SAMPLE 17048
STATE	KANSAS	KANSAS	KENTUCKY
COUNTY	KIOWA	SHERMAN	BELL
FIELD	WILDCAT	GOODLAND	GREASY BRUSH
WELL NAME	NIER NO. 1	WALLACE NO. 1-16	GREASY BRUSH NO. 8
LOCATION	SEC. 8, T29S, R20W	SEC. 16, T8S, R39W	CARTER COORDINATES 12-CN-68E
OWNER	MIDCO EXPLORATION, INC.	CENTENNIAL ENERGY CO.	WISER OIL CO.
COMPLETED	10/04/83	04/06/82	08/03/81
SAMPLED	10/03/83	03/29/83	09/02/83
FORMATION	MISS-	CRET-NIOBRARA	MISS-MAXTON SAND
GEOLOGIC PROVINCE CODE	360	450	160
DEPTH, FEET	5092	972	1972
WELLHEAD PRESSURE,PSIG	NOT GIVEN	61	430
OPEN FLOW, MCFD	4119	258	3000
COMPONENT, MOLE PCT			
METHANE	77.8	93.4	82.1
ETHANE	5.0	0.9	5.8
PROPANE	2.5	0.2	3.4
N-BUTANE	0.7	0.1	1.1
ISOBUTANE	0.4	0.0	0.3
N-PENTANE	0.1	TRACE	0.2
ISOPENTANE	0.2	TRACE	0.4
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	12.3	2.9	5.5
OXYGEN	0.1	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	0.3	0.4
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	1.9	0.1
HELIUM	0.57	0.06	0.43
HEATING VALUE*	998	981	1107
SPECIFIC GRAVITY	0.678	0.595	0.674

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 76 SAMPLE 16901	INDEX 77 SAMPLE 16900	INDEX 78 SAMPLE 16899
STATE	KENTUCKY	KENTUCKY	KENTUCKY
COUNTY	CLAY	CLAY	CLAY
FIELD	WILDCAT	WILDCAT	WILDCAT
WELL NAME	HERBERT BYRD ET AL. NO. 1	FLOYD FROST ET AL. NO. 1	HERBERT BYRD ET AL. NO. 1
LOCATION	CARTER COORDINATES 10, J, 70	CARTER COORDINATES 1, J, 70	CARTER COORDINATES 10, J, 70
OWNER	TENNESSEE LAND & EXPL. CO.	TENNESSEE LAND & EXPL. CO.	TENNESSEE LAND & EXPL. CO.
COMPLETED	11/01/81	01/01/83	11/01/81
SAMPLED	04/20/83	04/20/83	04/20/83
FORMATION	MISS-BIG LIME	ORDO-TRENTON	ORDO-KNOX
GEOLOGIC PROVINCE CODE	160	160	160
DEPTH, FEET	850	2623	3570
WELLHEAD PRESSURE,PSIG	300	NOT GIVEN	1140
OPEN FLOW, MCFD	200	NOT GIVEN	250
COMPONENT, MOLE PCT			
METHANE	85.2	84.6	85.5
ETHANE	5.7	7.6	5.4
PROPANE	2.2	2.6	2.1
N-BUTANE	0.7	0.7	0.7
ISOBUTANE	0.4	0.2	0.4
N-PENTANE	0.1	0.2	0.2
ISOPENTANE	0.4	0.3	0.4
CYCLOPENTANE	TRACE	TRACE	0.1
HEXANES PLUS	0.1	0.1	0.2
NITROGEN	4.3	3.3	4.4
OXYGEN	TRACE	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	0.3	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	TRACE	0.1
HELIUM	0.14	0.15	0.15
HEATING VALUE*	1087	1118	1095
SPECIFIC GRAVITY	0.648	0.656	0.654

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 79 SAMPLE 16777	INDEX 80 SAMPLE 16958	INDEX 81 SAMPLE 16795
STATE	KENTUCKY	LOUISIANA	LOUISIANA
COUNTY	PERRY	BIENVILLE	BIENVILLE
FIELD	CUTSHIN	RINGGOLD W	SAILES
WELL NAME	SAMUEL COUCH NO. <343-7296	CV RA SUA J. F. BOYET NO. 1	CRAWFORD ET AL. NO. 1
LOCATION	CARTER COORDINATES 16-J-75	SEC. 31, T16W, R9W	SEC. 7, T16N, R7W
OWNER	KEPCO, INC.	AMOCO PRODUCTION CO. (USA)	FRANKS & PETROFUNDS, INC.
COMPLETED	08/07/81	06/01/83	04/04/81
SAMPLED	02/23/83	06/01/83	03/09/83
FORMATION	MISS-BIG LIME	JURA-COTTON VALLEY	CRET-HOSSTON B
GEOLOGIC PROVINCE CODE	160	230	230
DEPTH, FEET	1980	9600	9205
WELLHEAD PRESSURE,PSIG	740	2900	1300
OPEN FLOW, MCFD	2477	NOT GIVEN	994
COMPONENT, MOLE PCT			
METHANE	80.3	86.1	95.7
ETHANE	8.8	3.9	1.0
PROPANE	3.5	1.4	0.1
N-BUTANE	0.9	0.6	0.1
ISOBUTANE	0.3	0.3	TRACE
N-PENTANE	0.2	0.3	0.1
ISOPENTANE	0.2	0.5	0.0
CYCLOPENTANE	0.2	0.1	TRACE
HEXANES PLUS	0.3	0.3	0.2
NITROGEN	4.3	0.1	0.7
OXYGEN	0.1	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.4	0.4	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	6.0	1.7
HELIUM	0.34	TRACE	0.02
HEATING VALUE*	1144	1063	1009
SPECIFIC GRAVITY	0.686	0.683	0.586

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 82 SAMPLE 16957	INDEX 83 SAMPLE 17070	INDEX 84 SAMPLE 17059
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	BOSSIER	CLAIBORNE	IBERIA
FIELD	COOTERVILLE	LEATHERMAN CREEK	AVERY ISLAND SE
WELL NAME	CV RA SUA R. L. HOSIER NO. 1	SHERRILL NO. 8	E. T. WEEKS SR. EST. NO. 1-D
LOCATION	SEC. 35, T15N, R11W	SEC. 21, T19N, R7W	SEC. 50, T13S, R6E
OWNER	AMOCO PRODUCTION CO. (USA)	MCGOLDRICK OIL CO.	ENERGY RESERVES GROUP, INC.
COMPLETED	04/21/83	11/--/82	09/12/82
SAMPLED	06/01/83	09/26/83	09/12/83
FORMATION	JURA-COTTON VALLEY	JURA-COTTON VALLEY	MIOC-SIPHONINA DAVISI-2
GEOLOGIC PROVINCE CODE	230	230	220
DEPTH, FEET	9450	10030	17338
WELLHEAD PRESSURE,PSIG	2900	1700	5800
OPEN FLOW, MCFD	400	4200	400
COMPONENT, MOLE PCT			
METHANE	93.0	92.0	91.4
ETHANE	2.7	3.1	3.1
PROPANE	0.3	0.9	1.0
N-BUTANE	0.1	0.3	0.3
ISOBUTANE	0.0	0.3	0.2
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.1	0.2	0.2
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	0.1	0.2	0.1
NITROGEN	0.1	0.3	0.9
OXYGEN	TRACE	0.1	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	0.3	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	3.1	2.1	2.3
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1016	1059	1043
SPECIFIC GRAVITY	0.607	0.621	0.620

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 85 SAMPLE 17085	INDEX 86 SAMPLE 16740	INDEX 87 SAMPLE 16842
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	IBERIA	JEFFERSON DAVIS	LA SALLE
FIELD	EUGENE ISLAND	WILDCAT	SUMMERVILLE S
WELL NAME	STATE LEASE 7634 NO. 2	IRVIN FONTENOT NO. 1	IPB LLS NO. 22
LOCATION	BLK. 9	SEC. 7, T8S, R5W	SEC. 35, T9N, R2E
OWNER	VOLVO PETROLEUM INC.	GETTY OIL CO.	PLACID OIL CO.
COMPLETED	03/03/80	07/--/82	11/--/82
SAMPLED	10/10/83	12/--/82	03/--/83
FORMATION	-BIG NOD NO. 3 SAND	OLIG-HACKBERRY	EOCE-E-3 SAND
GEOLOGIC PROVINCE CODE	952	220	230
DEPTH, FEET	10813	9688	3964
WELLHEAD PRESSURE,PSIG	4400	NOT GIVEN	900
OPEN FLOW, MCFD	3500	3000	170
COMPONENT, MOLE PCT			
METHANE	96.9	91.4	96.0
ETHANE	1.6	3.9	0.3
PROPANE	0.3	1.7	TRACE
N-BUTANE	0.1	0.5	0.0
ISOBUTANE	0.1	0.6	0.0
N-PENTANE	0.1	0.1	0.0
ISOPENTANE	TRACE	0.4	0.0
CYCLOPENTANE	TRACE	0.1	0.0
HEXANES PLUS	0.1	0.2	0.0
NITROGEN	0.3	0.4	1.8
OXYGEN	0.0	TRACE	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	0.4	1.4
HELIUM	TRACE	TRACE	0.02
HEATING VALUE*	1034	1113	979
SPECIFIC GRAVITY	0.577	0.628	0.575

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 88 SAMPLE 16784	INDEX 89 SAMPLE 16807	INDEX 90 SAMPLE 16869
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	OCS	POINTE COUPEE	POINTE COUPEE
FIELD	MISSISSIPPI CANYON BLK 148-A	MOORE-SAMS	MORGANZA
WELL NAME	OCS-G-2640 NO. A-1	V. J. HURST NO. 1	DOROTHY C. BROWN NO. 3
LOCATION	MISSISSIPPI CANYON BLK 148-A	SEC. 55, T4S, R9E	SEC. 48, T4S, R8E
OWNER	ARCO OIL & GAS CO.	AMOCO PRODUCTION CO. (USA)	AMOCO PRODUCTION CO. (USA)
COMPLETED	09/12/81	08/14/82	11/08/82
SAMPLED	03/04/83	03/05/83	04/09/83
FORMATION	PLIO-9100 RA	CRET-TUSCALOOSA	CRET-TUSCALOOSA SAND
GEOLOGIC PROVINCE CODE	952	220	220
DEPTH, FEET	9752	18882	18478
WELLHEAD PRESSURE,PSIG	3721	8400	6015
OPEN FLOW, MCFD	7501	NOT GIVEN	8000
COMPONENT, MOLE PCT			
METHANE	96.5	90.3	89.2
ETHANE	1.3	2.0	3.1
PROPANE	0.5	0.4	0.6
N-BUTANE	0.2	0.1	0.2
ISOBUTANE	0.1	0.1	0.1
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.1	TRACE	0.2
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.1	0.2	0.2
NITROGEN	0.3	0.4	0.2
OXYGEN	TRACE	TRACE	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	5.9	5.9
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1042	987	1012
SPECIFIC GRAVITY	0.582	0.637	0.651

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 91 SAMPLE 16922	INDEX 92 SAMPLE 16977	INDEX 93 SAMPLE 17137
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	RED RIVER	RED RIVER	UNION
FIELD	MARTIN	THORN LAKE	DARBONNE
WELL NAME	CROWN ZELLERBACH NO. 1	CV RA SUB SAMPLE NO. 2	DILLARD NO. 1
LOCATION	SEC. 18, T13N, R8W	SEC. 9, T14N, R11W	SEC. 27, T20N, R1W
OWNER	PIONEER PRODUCTION CORP.	AMOCO PRODUCTION CO. (USA)	MIDROC OIL CO.
COMPLETED	05/04/83	08/06/82	07/--/81
SAMPLED	05/04/83	06/16/83	11/09/83
FORMATION	NOT GIVEN	JURA-COTTON VALLEY	JURA-COTTON VALLEY-DAVIS
GEOLOGIC PROVINCE CODE	230	230	230
DEPTH, FEET	NOT GIVEN	9800	8574
WELLHEAD PRESSURE,PSIG	3400	3600	NOT GIVEN
OPEN FLOW, MCFD	NOT GIVEN	225	211
COMPONENT, MOLE PCT			
METHANE	94.5	93.9	83.6
ETHANE	0.2	1.9	8.4
PROPANE	TRACE	0.2	3.5
N-BUTANE	TRACE	0.1	1.0
ISOBUTANE	0.0	0.0	0.6
N-PENTANE	TRACE	0.1	0.2
ISOPENTANE	TRACE	0.0	0.5
CYCLOPENTANE	TRACE	TRACE	0.1
HEXANES PLUS	TRACE	0.1	0.3
NITROGEN	0.4	0.1	0.4
OXYGEN	0.1	TRACE	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.3	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	4.5	3.2	1.3
HELIUM	TRACE	TRACE	0.02
HEATING VALUE*	962	1004	1191
SPECIFIC GRAVITY	0.600	0.601	0.692

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 94 SAMPLE 16959	INDEX 95 SAMPLE 16848	INDEX 96 SAMPLE 17013
STATE	LOUISIANA	MICHIGAN	MICHIGAN
PARISH	WEBSTER	MANISTEE	MISSAUKEE
FIELD	ADA	CLEON 17	FALMOUTH
WELL NAME	MONZINGO C NO. 1	REBMAN NO. 3-16 A	GILDE ET AL. NO. 1-25
LOCATION	SEC. 27, T18N, R8W	SEC. 16, T24N, R13W	SEC. 25, T22N, R7W
OWNER	PHILLIPS PETROLEUM CO.	NORTHERN MICHIGAN EXPL. CO.	PATRICK PETROLEUM CO.
COMPLETED	09/04/82	02/04/80	10/08/82
SAMPLED	05/18/83	03/23/83	08/--/83
FORMATION	JURA-COTTON VALLEY	SILU-BROWN NIAGARAN	ORDO-PRAIRIE DU CHIEN
GEOLOGIC PROVINCE CODE	230	305	305
DEPTH, FEET	9296	5376	10580
WELLHEAD PRESSURE,PSIG	5406	2100	3652
OPEN FLOW, MCFD	10500	22440	17500
COMPONENT, MOLE PCT			
METHANE	86.6	82.8	95.0
ETHANE	5.5	7.8	2.0
PROPANE	2.0	3.6	0.2
N-BUTANE	0.6	1.1	0.0
ISOBUTANE	0.8	1.1	0.0
N-PENTANE	0.4	0.2	0.0
ISOPENTANE	0.1	0.7	0.0
CYCLOPENTANE	0.4	0.2	0.0
HEXANES PLUS	1.1	0.3	0.0
NITROGEN	0.5	1.8	2.1
OXYGEN	0.1	0.0	TRACE
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.3	0.2	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.6	0.1	0.3
HELIUM	TRACE	0.04	0.03
HEATING VALUE*	1169	1208	1004
SPECIFIC GRAVITY	0.683	0.698	0.576

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 97 SAMPLE 16868	INDEX 98 SAMPLE 16845	INDEX 99 SAMPLE 16755
STATE	MISSISSIPPI	MISSISSIPPI	MISSISSIPPI
COUNTY	CHICKASAW	COVINGTON	MADISON
FIELD	BACON	GUM BRANCH	CENTRAL FANNEGUSHA
WELL NAME	ASHBY 22-1 NO. 1	BOOTH NO. A-1	HAUBERG NO. 1-CF
LOCATION	SEC. 22, T12S, R4E	SEC. 28, T8N, R17W	SEC. 34, T9N, R4E
OWNER	MOON-HIMES-TIGRETT OPER. CO.	CALLON PETROLEUM CO.	SHELL OIL CO.
COMPLETED	03/--/82	03/11/82	01/22/83
SAMPLED	04/08/83	03/25/83	01/22/83
FORMATION	MISS-CARTER	CRET-SLIGO	JURA-NORPHLET
GEOLOGIC PROVINCE CODE	200	210	210
DEPTH, FEET	NOT GIVEN	14598	14810
WELLHEAD PRESSURE,PSIG	525	3200	2500
OPEN FLOW, MCFD	125	600	8000
COMPONENT, MOLE PCT			
METHANE	97.3	83.1	0.2
ETHANE	1.0	1.7	TRACE
PROPANE	0.1	1.6	0.0
N-BUTANE	0.1	1.4	0.0
ISOBUTANE	0.0	1.5	0.0
N-PENTANE	0.0	1.8	0.0
ISOPENTANE	0.1	0.5	0.0
CYCLOPENTANE	TRACE	0.6	0.0
HEXANES PLUS	TRACE	2.9	0.0
NITROGEN	1.0	0.9	1.2
OXYGEN	TRACE	TRACE	0.0
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.2	0.2	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	3.9	98.5
HELIUM	0.07	0.01	0.01
HEATING VALUE*	1014	1282	2
SPECIFIC GRAVITY	0.568	0.790	1.519

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 100 SAMPLE 17075	INDEX 101 SAMPLE 16892	INDEX 102 SAMPLE 16847
STATE	MISSISSIPPI	MISSISSIPPI	MISSISSIPPI
COUNTY	MONROE	RANKIN	WALTHALL
FIELD	SPLUNGE	PISGAH S	DARBUN N
WELL NAME	WILLIAMSON 21-15 NO. 1	HAUBERG NO. 6-R	BOYD 34-10 NO. 1
LOCATION	SEC. 21, T12S, R16W	SEC. 35, T7N, R4E	SEC. 34, T4N, R11E
OWNER	TXO PRODUCTION CORP.	SHELL OIL CO.	PRUET PRODUCTION CO.
COMPLETED	09/28/83	NOT GIVEN	10/19/80
SAMPLED	09/27/83	04/22/83	03/25/83
FORMATION	MISS-CARTER B	JURA-BUCKNER	CRET-MOORINGSPORT
GEOLOGIC PROVINCE CODE	200	210	210
DEPTH, FEET	1720	14644	14364
WELLHEAD PRESSURE,PSIG	750	2632	4700
OPEN FLOW, MCFD	600	6875	29000
COMPONENT, MOLE PCT			
METHANE	97.6	0.3	94.0
ETHANE	0.2	TRACE	0.3
PROPANE	TRACE	0.0	0.1
N-BUTANE	0.0	0.0	TRACE
ISOBUTANE	0.0	0.0	TRACE
N-PENTANE	0.0	0.0	TRACE
ISOPENTANE	0.0	0.0	0.0
CYCLOPENTANE	0.0	0.0	TRACE
HEXANES PLUS	0.0	0.0	0.1
NITROGEN	1.6	0.8	1.1
OXYGEN	0.1	0.1	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	TRACE	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	98.7	4.1
HELIUM	0.09	TRACE	0.02
HEATING VALUE*	993	3	966
SPECIFIC GRAVITY	0.562	1.520	0.602

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 103 SAMPLE 16839	INDEX 104 SAMPLE 17069	INDEX 105 SAMPLE 17121
STATE	MISSISSIPPI	MISSISSIPPI	MISSOURI
COUNTY	WALTHALL	WARREN	PLATTE
FIELD	DEXTER	BOVINA	WILDCAT
WELL NAME	MORRIS 2-9 NO. 1	UNIT NO. 7-9	TIFFANY SPRINGS IND. NO. 4
LOCATION	SEC. 2, T1N, R12E	SEC. 7, T16N, R5E	SEC. 36, T52N, R34W
OWNER	GETTY OIL CO.	PLACID OIL CO.	TIFFANY SPRINGS INDUSTRY
COMPLETED	08/--/82	05/28/82	06/--/83
SAMPLED	03/--/83	09/20/83	10/--/83
FORMATION	CRET-PALUXY P-3	JURA-COTTON VALLEY	PENN-
GEOLOGIC PROVINCE CODE	210	210	335
DEPTH, FEET	12306	16700	621
WELLHEAD PRESSURE,PSIG	3690	5850	NOT GIVEN
OPEN FLOW, MCFD	6175	1200	425
COMPONENT, MOLE PCT			
METHANE	86.3	88.0	95.4
ETHANE	0.2	0.7	0.1
PROPANE	0.1	0.1	TRACE
N-BUTANE	0.1	0.0	0.1
ISOBUTANE	TRACE	0.0	TRACE
N-PENTANE	0.1	0.0	TRACE
ISOPENTANE	0.0	0.0	TRACE
CYCLOPENTANE	0.1	0.0	TRACE
HEXANES PLUS	0.3	0.0	0.1
NITROGEN	6.9	4.4	3.8
OXYGEN	1.7	0.0	0.0
ARGON	0.1	TRACE	TRACE
HYDROGEN	0.2	0.3	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	3.8	6.5	0.2
HELIUM	0.02	0.06	0.17
HEATING VALUE*	908	908	977
SPECIFIC GRAVITY	0.643	0.639	0.575

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 106 SAMPLE 16764	INDEX 107 SAMPLE 16885	INDEX 108 SAMPLE 16849
STATE	MONTANA	MONTANA	MONTANA
COUNTY	CARBON	LIBERTY	TETON
FIELD	GOLDEN DOME	WILDCAT	HIGHVIEW
WELL NAME	RIECKEN NO. 16-11	IVA KOLSTAD NO. 1, ET AL.	LARSON NO. 1-34
LOCATION	SEC. 11, T7S, R22E	SEC. 28, T29N, R4E	SEC. 34, T28N, R6W
OWNER	MONTANA POWER CO.	LYTM CO., INC.	OXY PETROLEUM, INC.
COMPLETED	08/--/82	02/23/80	03/28/83
SAMPLED	02/03/83	04/20/83	03/28/83
FORMATION	CRET-GREYBULL	CRET-COLORADO	MISS-MADISON
GEOLOGIC PROVINCE CODE	520	500	500
DEPTH, FEET	5442	448	3089
WELLHEAD PRESSURE,PSIG	1673	200	NOT GIVEN
OPEN FLOW, MCFD	900	1023	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	71.0	91.8	75.7
ETHANE	13.2	0.4	7.3
PROPANE	6.1	TRACE	3.1
N-BUTANE	2.3	TRACE	1.1
ISOBUTANE	1.4	0.0	0.5
N-PENTANE	0.4	TRACE	0.3
ISOPENTANE	1.5	0.0	0.5
CYCLOPENTANE	0.2	TRACE	0.1
HEXANES PLUS	0.6	0.1	0.3
NITROGEN	2.8	7.2	6.7
OXYGEN	0.1	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.3	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.4
CARBON DIOXIDE	0.3	TRACE	3.5
HELIUM	0.03	0.13	0.27
HEATING VALUE*	1359	943	1089
SPECIFIC GRAVITY	0.807	0.586	0.733

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 109 SAMPLE 16796	INDEX 110 SAMPLE 16883	INDEX 111 SAMPLE 16981
STATE	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY	CHAVES	CHAVES	EDDY
FIELD	PECOS SLOPE	WILDCAT	CARLSBAD S
WELL NAME	LUKE COM FED. NO. 1	HANLAD STATE NO. 1	NICHOLS NO. 1
LOCATION	SEC. 24, T10S, R25E	SEC. 13, T8S, R27E	SEC. 21, T22S, R27E
OWNER	MCCLELLAN OIL CORP.	RAULT PETROLEUM CORP.	PETRO-LEWIS CORP.
COMPLETED	06/--/82	07/09/82	06/02/82
SAMPLED	03/08/83	04/20/83	06/21/83
FORMATION	PERM-ABO	PENN-SAND	PENN-STRAWN
GEOLOGIC PROVINCE CODE	430	430	430
DEPTH, FEET	4600	6327	10319
WELLHEAD PRESSURE,PSIG	1000	2095	4500
OPEN FLOW, MCFD	750	2650	6483
COMPONENT, MOLE PCT			
METHANE	80.2	89.9	85.2
ETHANE	4.3	3.9	7.1
PROPANE	1.7	1.0	2.5
N-BUTANE	0.6	0.4	0.8
ISOBUTANE	0.3	0.1	0.8
N-PENTANE	0.1	0.2	0.2
ISOPENTANE	0.3	0.3	0.8
CYCLOPENTANE	0.1	0.1	0.3
HEXANES PLUS	0.2	0.2	0.7
NITROGEN	10.0	3.3	1.0
OXYGEN	1.3	TRACE	TRACE
ARGON	0.1	TRACE	TRACE
HYDROGEN	0.2	0.2	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.3	0.2
HELIUM	0.44	0.18	0.02
HEATING VALUE*	996	1059	1200
SPECIFIC GRAVITY	0.668	0.623	0.685

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 112 SAMPLE 16910	INDEX 113 SAMPLE 16803	INDEX 114 SAMPLE 17000
STATE	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY	HARDING	LEA	QUAY
FIELD	BRAVO DOME	JOHNSON RANCH	WILDCAT
WELL NAME	HEIMANN NO. 1 (1933-031M)	JACKSON UNIT NO. 1	WICHITA STATE NO. 1
LOCATION	SEC. 3, T19N, R33E	SEC. 22, T24S, R33E	SEC. 36, T5N, R30E
OWNER	AMOCO PRODUCTION CO. (USA)	MESA PETROLEUM CO.	DESANA CORP.
COMPLETED	04/21/83	02/17/82	03/25/83
SAMPLED	04/19/83	03/15/83	08/09/83
FORMATION	PERM-TUBB	PENN-MORROW	PERM-SAN ANDRES
GEOLOGIC PROVINCE CODE	445	430	435
DEPTH, FEET	2370	15430	2070
WELLHEAD PRESSURE,PSIG	450	5770	680
OPEN FLOW, MCFD	1163	3704	519
COMPONENT, MOLE PCT			
METHANE	TRACE	94.5	25.4
ETHANE	TRACE	2.3	2.1
PROPANE	0.0	0.6	1.4
N-BUTANE	0.0	0.2	0.3
ISOBUTANE	0.0	0.2	0.3
N-PENTANE	0.0	0.1	0.1
ISOPENTANE	0.0	0.1	0.2
CYCLOPENTANE	0.0	0.1	TRACE
HEXANES PLUS	0.0	0.2	0.1
NITROGEN	1.0	0.5	69.5
OXYGEN	0.1	TRACE	TRACE
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.0	0.2	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	98.8	1.1	0.1
HELIUM	0.01	0.02	0.21
HEATING VALUE*	0	1051	370
SPECIFIC GRAVITY	1.521	0.601	0.883

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 115 SAMPLE 17120	INDEX 116 SAMPLE 16757	INDEX 117 SAMPLE 17088
STATE	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY	RIO ARRIBA	RIO ARRIBA	SAN JUAN
FIELD	UNDESIGNATED	UNDESIGNATED GALLUP	ARMENTA
WELL NAME	DIVIDE NO. 1	CHICOSA CANYON NO. 1	STATE GAS COM. BZ NO. 1
LOCATION	SEC. 35, T26N, R2W	SEC. 35, T31N, R4W	SEC. 32, T29N, R10W
OWNER	DUGAN PRODUCTION CORP.	SOUTHLAND ROYALTY CO.	AMOCO PRODUCTION CO. (USA)
COMPLETED	05/13/83	09/13/81	05/05/83
SAMPLED	10/22/83	01/26/83	10/12/83
FORMATION	CRET-MESA VERDE & MANCOS	CRET-GALLUP	CRET-GALLUP
GEOLOGIC PROVINCE CODE	580	580	580
DEPTH, FEET	6234	7532	5412
WELLHEAD PRESSURE,PSIG	1485	3150	988
OPEN FLOW, MCFD	825	1321	130
COMPONENT, MOLE PCT			
METHANE	80.1	96.1	85.9
ETHANE	10.6	0.2	6.5
PROPANE	5.0	TRACE	1.3
N-BUTANE	1.3	0.0	0.7
ISOBUTANE	0.9	0.0	0.0
N-PENTANE	0.4	0.0	0.0
ISOPENTANE	0.6	0.0	0.3
CYCLOPENTANE	0.1	0.0	TRACE
HEXANES PLUS	0.2	0.0	TRACE
NITROGEN	0.5	0.2	2.6
OXYGEN	TRACE	0.1	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	0.3	2.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	3.1	0.1
HELIUM	0.02	0.01	0.08
HEATING VALUE*	1262	978	1064
SPECIFIC GRAVITY	0.721	0.586	0.615

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 118 SAMPLE 17089	INDEX 119 SAMPLE 17026	INDEX 120 SAMPLE 17062
STATE	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY	SAN JUAN	SAN JUAN	SANDOVAL
FIELD	BEAUTIFUL MOUNTAIN N	FLORA VISTA	RUSTY
WELL NAME	NAVAJO NO. 2-32	THOMPSON NO. 13	DOME FED. 1-21-7 NO. 1
LOCATION	SEC. 32, T27N, R19W	SEC. 28, T31N, R12W	SEC. 1, T21N, R7W
OWNER	PETROLEUM ENERGY, INC.	SOUTHLAND ROYALTY CO.	DOME PETROLEUM CORP.
COMPLETED	NOT GIVEN	01/08/83	09/01/82
SAMPLED	10/13/83	08/22/83	09/13/83
FORMATION	MISS-	CRET-FRUITLAND	CRET-CHACRA
GEOLOGIC PROVINCE CODE	580	580	580
DEPTH, FEET	6022	2270	2000
WELLHEAD PRESSURE,PSIG	2200	763	480
OPEN FLOW, MCFD	1500	655	750
COMPONENT, MOLE PCT			
METHANE	41.2	86.3	87.9
ETHANE	4.3	4.4	5.9
PROPANE	1.9	3.1	2.2
N-BUTANE	0.7	0.8	0.5
ISOBUTANE	0.4	1.3	0.3
N-PENTANE	0.2	0.1	0.1
ISOPENTANE	0.2	0.7	0.2
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	0.1	0.2	0.1
NITROGEN	45.6	2.5	2.2
OXYGEN	0.0	0.1	TRACE
ARGON	0.4	TRACE	TRACE
HYDROGEN	TRACE	0.3	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.9	0.1	0.2
HELIUM	4.05	0.04	0.02
HEATING VALUE*	603	1153	1099
SPECIFIC GRAVITY	0.805	0.672	0.635

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 121 SAMPLE 16909	INDEX 122 SAMPLE 16499	INDEX 123 SAMPLE 16896
STATE	NEW MEXICO	NEW YORK	NORTH DAKOTA
COUNTY	UNION	ALLEGANY	BILLINGS
FIELD	BRAVO DOME	VANDERMARK-HARDING	ROUGH RIDER
WELL NAME	CAIN NO. E-1 (1935-221G)	BLACK NO. 1	FED. NO. 6-2
LOCATION	SEC. 22, T22N, R15W	WELLSVILLE N QUAD, WARD TWP	SEC. 6, T144N,R101W
OWNER	AMOCO PRODJCTION CO. (USA)	VANDERMARK ASSOCIATES	FLORIDA EXPLORATION CO.
COMPLETED	04/--/83	09/13/81	03/16/81
SAMPLED	04/19/83	04/20/82	04/27/83
FORMATION	PERM-TUBB	DEVO-ORISKANY	DEVO-DUPEROW
GEOLOGIC PROVINCE CODE	445	160	395
DEPTH, FEET	2060	4199	11044
WELLHEAD PRESSURE,PSIG	350	1390	NOT GIVEN
OPEN FLOW, MCFD	1770	2100	1500
COMPONENT, MOLE PCT			
METHANE	TRACE	88.5	64.3
ETHANE	TRACE	9.0	14.9
PROPANE	0.0	1.4	9.5
N-BUTANE	0.0	0.2	3.7
ISOBUTANE	0.0	0.1	1.8
N-PENTANE	0.0	TRACE	1.2
ISOPENTANE	0.0	0.1	1.9
CYCLOPENTANE	0.0	TRACE	0.2
HEXANES PLUS	0.0	TRACE	0.6
NITROGEN	0.8	0.7	0.9
OXYGEN	TRACE	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	99.0	TRACE	0.7
HELIUM	0.02	0.04	0.01
HEATING VALUE*	0	1108	1522
SPECIFIC GRAVITY	1.521	0.622	0.894

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 124 SAMPLE 17146	INDEX 125 SAMPLE 16846	INDEX 126 SAMPLE 16841
STATE	NORTH DAKOTA	NORTH DAKOTA	NORTH DAKOTA
COUNTY	DIVIDE	DUNN	DUNN
FIELD	PAULSON	BEAR CREEK	LITTLE KNIFE
WELL NAME	GIN-HAN PARTNERSHIP NO. 1	KNUTSON-WERRE 34 NO. 1	FREDERICK SKACHENKO NO. A-1
LOCATION	SEC. 11, T163N,R97W	SEC. 34, T148N, R96W	SEC. 29, T144N, R97W
OWNER	TEXACO INC.	MESA PETROLEUM CO.	APACHE OIL CORP.
COMPLETED	12/27/83	05/31/82	11/07/82
SAMPLED	12/27/83	03/--/83	03/23/83
FORMATION	ORDO-RED RIVER	ORDO-RED RIVER	MISS-MISSION CANYON
GEOLOGIC PROVINCE CODE	395	395	395
DEPTH, FEET	10610	13864	9550
WELLHEAD PRESSURE,PSIG	2500	2700	1325
OPEN FLOW, MCFD	3300	4969	201
COMPONENT, MOLE PCT			
METHANE	70.5	74.4	27.8
ETHANE	15.5	14.5	21.8
PROPANE	5.9	5.4	15.9
N-BUTANE	1.2	1.2	5.5
ISOBUTANE	0.9	0.9	2.4
N-PENTANE	0.3	0.4	0.8
ISOPENTANE	0.2	0.2	2.3
CYCLOPENTANE	TRACE	0.3	0.3
HEXANES PLUS	0.1	0.6	0.6
NITROGEN	4.8	0.9	0.3
OXYGEN	0.1	TRACE	0.8
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	18.5
CARBON DIOXIDE	0.5	0.9	2.9
HELIUM	0.08	0.03	TRACE
HEATING VALUE*	1242	1293	1645
SPECIFIC GRAVITY	0.760	0.755	1.173

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 127 SAMPLE 16786	INDEX 128 SAMPLE 17023	INDEX 129 SAMPLE 17142
STATE	NORTH DAKOTA	NORTH DAKOTA	NORTH DAKOTA
COUNTY	MCKENZIE	MCKENZIE	MCKENZIE
FIELD	CHARLSON	ELLSWORTH	MARLEY
WELL NAME	CHARLSON DEEP UNIT NO. 2	STATE-ROGNESS NO. 1	CROWFLY NO. 17-10
LOCATION	SEC. 3, T153N, R95W	SEC. 22, T149N, R100W	SEC. 17, T152N,R102W
OWNER	TEXACO INC.	CHAMPLIN PETROLEUM CO.	GETTY OIL CO.
COMPLETED	05/07/82	08/--/83	NOT GIVEN
SAMPLED	03/03/83	08/29/83	11/30/83
FORMATION	ORDO-RED RIVER	ORDO-RED RIVER	SILU-INTERLAKE
GEOLOGIC PROVINCE CODE	395	395	395
DEPTH, FEET	13129	13884	13111
WELLHEAD PRESSURE,PSIG	4250	NOT GIVEN	NOT GIVEN
OPEN FLOW, MCFD	1500	NOT GIVEN	80
COMPONENT, MOLE PCT			
METHANE	73.5	73.0	62.1
ETHANE	5.1	10.2	18.0
PROPANE	1.7	3.6	10.6
N-BUTANE	0.6	1.5	3.8
ISOBUTANE	0.6	1.1	1.3
N-PENTANE	0.2	0.6	1.6
ISOPENTANE	0.2	0.7	1.3
CYCLOPENTANE	0.1	0.3	0.1
HEXANES PLUS	0.3	1.1	0.4
NITROGEN	2.7	0.5	0.3
OXYGEN	0.6	0.3	0.1
ARGON	TRACE	0.0	0.0
HYDROGEN	0.2	0.2	0.0
HYDROGEN SULFIDE**	12.6	5.7	0.0
CARBON DIOXIDE	1.5	1.3	0.5
HELIUM	0.07	0.03	0.01
HEATING VALUE*	1038	1264	1547
SPECIFIC GRAVITY	0.740	0.790	0.902

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 130 SAMPLE 16713	INDEX 131 SAMPLE 16929	INDEX 132 SAMPLE 16982
STATE	NORTH DAKOTA	OKLAHOMA	OKLAHOMA
COUNTY	WILLIAMS	BEAVER	BEAVER
FIELD	WILLOW CREEK	DOMBEY	LORENA E
WELL NAME	SLETTE-STANGELAND NCT 1 NO.1	BUXTON NO. 1	KING NO. E-1
LOCATION	SEC. 13, T153N,R100W	SEC. 18, T3N, R20ECM	SEC. 31, T6N, R20ECM
OWNER	TEXACO INC.	FUNK EXPLORATION	ANADARKO PRODUCTION CO.
COMPLETED	01/28/82	05/04/82	10/04/81
SAMPLED	11/23/82	05/10/83	07/06/83
FORMATION	ORDO-RED RIVER	MISS-CHESTER	PENN-MORROW
GEOLOGIC PROVINCE CODE	395	360	360
DEPTH, FEET	14037	6750	6064
WELLHEAD PRESSURE,PSIG	3600	1625	880
OPEN FLOW, MCFD	2800	4500	157
COMPONENT, MOLE PCT			
METHANE	72.3	80.9	75.6
ETHANE	12.9	6.3	3.9
PROPANE	6.4	4.5	3.0
N-BUTANE	2.7	1.4	0.9
ISOBUTANE	1.1	0.5	0.7
N-PENTANE	1.0	0.2	0.3
ISOPENTANE	1.4	0.8	0.6
CYCLOPENTANE	0.1	0.2	0.1
HEXANES PLUS	0.5	0.4	0.2
NITROGEN	0.7	4.0	13.8
OXYGEN	TRACE	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.2	0.3
HYDROGEN SULFIDE**	0.1	0.0	0.0
CARBON DIOXIDE	0.6	0.4	0.3
HELIUM	0.03	0.14	0.31
HEATING VALUE*	1391	1185	1021
SPECIFIC GRAVITY	0.809	0.711	0.709

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 133 SAMPLE 16979	INDEX 134 SAMPLE 16761	INDEX 135 SAMPLE 16746
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	BEAVER	BECKHAM	BECKHAM
FIELD	SIX MILE W	BERLIN SE	MAYFIELD NE
WELL NAME	KIMBALL NO. 1-22	IKE HALL NO. 1-1	MAYFIELD NO. 1-34
LOCATION	SEC. 22, T3N, R22ECM	SEC. 1, T10N, R23W	SEC. 34, T11N, R25W
OWNER	NATURAL GAS ANADARKO, INC.	PIONEER PRODUCTION CORP.	UNION OIL CO. OF CALIFORNIA
COMPLETED	10/21/82	08/25/82	06/06/81
SAMPLED	06/24/83	01/31/83	01/06/83
FORMATION	MISS-CHESTER	PERM-GRANITE WASH	PENN-ATOKA NO. 2
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	7292	11875	14256
WELLHEAD PRESSURE,PSIG	718	3560	3400
OPEN FLOW, MCFD	5573	5500	425
COMPONENT, MOLE PCT			
METHANE	88.0	81.9	88.5
ETHANE	4.5	8.3	4.6
PROPANE	2.5	3.7	1.8
N-BUTANE	0.9	1.2	0.4
ISOBUTANE	0.3	0.9	0.5
N-PENTANE	0.2	0.3	0.3
ISOPENTANE	0.6	0.8	0.1
CYCLOPENTANE	0.1	0.3	0.3
HEXANES PLUS	0.2	0.9	0.8
NITROGEN	1.5	0.8	1.2
OXYGEN	0.2	0.1	TRACE
ARGON	TRACE	0.0	0.0
HYDROGEN	0.3	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.7	0.6	1.1
HELIUM	0.11	0.04	0.03
HEATING VALUE*	1127	1250	1126
SPECIFIC GRAVITY	0.655	0.722	0.655

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 136 SAMPLE 16802	INDEX 137 SAMPLE 16837	INDEX 138 SAMPLE 17139
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	BECKHAM	BLAINE	CADDO
FIELD	SWEETWATER W	WATONGA CHICKASHA TREND	APACHE E
WELL NAME	B. M. PURYEAR NO. 20-1	KARNS GAS UNIT NO. 1	THOMAS NO. 1-31
LOCATION	SEC. 20, T11N, R26W	SEC. 10, T15N, R11W	SEC. 31, T5N, R10W
OWNER	GETTY OIL CO.	TOKLAN OIL & GAS CORP.	KIRBY EXPLORATION CO.
COMPLETED	09/--/82	03/24/83	--/--/83
SAMPLED	03/13/83	03/24/83	11/22/83
FORMATION	PENN-MORROW	PENN-MORROW	PENN-BRITT
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	17092	9642	17000
WELLHEAD PRESSURE,PSIG	10300	6500	6000
OPEN FLOW, MCFD	340	3850	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	97.3	92.7	94.5
ETHANE	0.7	3.3	1.5
PROPANE	0.1	0.9	0.2
N-BUTANE	0.1	0.2	TRACE
ISOBUTANE	0.1	0.1	0.0
N-PENTANE	0.1	0.0	TRACE
ISOPENTANE	0.0	0.8	TRACE
CYCLOPENTANE	0.1	0.4	TRACE
HEXANES PLUS	0.2	0.4	TRACE
NITROGEN	0.2	0.4	2.4
OXYGEN	0.0	0.0	0.5
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.2	0.2	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.0	0.6	0.9
HELIUM	0.01	0.02	0.02
HEATING VALUE*	1026	1102	989
SPECIFIC GRAVITY	0.581	0.623	0.585

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 139 SAMPLE 17140	INDEX 140 SAMPLE 16756	INDEX 141 SAMPLE 17063
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CADDO	CADDO	CADDO
FIELD	APACHE E	CYRIL BASIN	EXEDINE NE
WELL NAME	SCHNEBERGER NO. 1-17	PATTERSON NO. 1-8	FRED TUCKER UNIT A NO. 1
LOCATION	SEC. 17, T5N, R10W	SEC. 8, T5N, R10W	SEC. 30, T11N, R12W
OWNER	KIRBY EXPLORATION CO.	CONTINENTAL RESOURCES CORP.	AMOCO PRODUCTION CO.
COMPLETED	--/--/83	09/02/82	10/23/82
SAMPLED	11/21/83	01/--/83	09/13/83
FORMATION	NOT GIVEN	PENN-SPRINGER GODDARD	PENN-ATOKA
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	19553	19557	12468
WELLHEAD PRESSURE,PSIG	3000	14000	6815
OPEN FLOW, MCFD	NOT GIVEN	8000	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	95.5	96.7	94.4
ETHANE	1.3	1.1	3.2
PROPANE	0.1	0.1	0.6
N-BUTANE	TRACE	0.0	0.0
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	TRACE	0.0	0.0
ISOPENTANE	TRACE	0.0	0.0
CYCLOPENTANE	0.1	0.0	0.0
HEXANES PLUS	TRACE	0.0	0.0
NITROGEN	1.4	0.2	0.3
OXYGEN	0.3	0.1	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.2	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.2	1.5	1.1
HELIUM	0.01	0.01	0.02
HEATING VALUE*	997	1003	1030
SPECIFIC GRAVITY	0.582	0.575	0.586

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 142 SAMPLE 17076	INDEX 143 SAMPLE 16800	INDEX 144 SAMPLE 16792
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CADDO	CADDO	CADDO
FIELD	GRACEMONT E	HINTON NW	LAVERTY
WELL NAME	STEVENS NO. 26-1	WAYNE NO. 1	LEON FUERTH NO. 1-23
LOCATION	SEC. 26, T8N, R10W	SEC. 15, T11N, R11W	SEC. 23, T6N, R9W
OWNER	SANTA FE MINERALS, INC.	COTTON PETROLEUM CORP.	GULF OIL EXPL. & PROD. CO.
COMPLETED	04/11/83	07/15/82	04/02/82
SAMPLED	09/29/83	03/10/83	02/10/83
FORMATION	PENN-SPRINGER	PENN-BRITT	PENN-SPRINGER PRIMROSE SAND
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	17731	13374	16620
WELLHEAD PRESSURE,PSIG	11400	7600	7275
OPEN FLOW, MCFD	1804	1439	3123
COMPONENT, MOLE PCT			
METHANE	96.6	96.4	75.7
ETHANE	0.6	1.4	11.4
PROPANE	0.1	0.2	4.9
N-BUTANE	0.0	TRACE	1.7
ISOBUTANE	0.0	TRACE	0.7
N-PENTANE	0.0	0.0	0.5
ISOPENTANE	0.0	0.1	0.7
CYCLOPENTANE	0.0	0.0	0.2
HEXANES PLUS	0.0	0.0	0.4
NITROGEN	0.3	0.2	2.6
OXYGEN	0.1	TRACE	0.4
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	2.0	1.4	0.5
HELIUM	0.01	0.02	0.02
HEATING VALUE*	993	1012	1259
SPECIFIC GRAVITY	0.578	0.578	0.749

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 145 SAMPLE 16865	INDEX 146 SAMPLE 16932	INDEX 147 SAMPLE 16996
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CADDO	CADDO	CARTER
FIELD	ONEY SW	WILDCAT	LAKE MURRAY
WELL NAME	DIDIER NO. 1-28	DUNN NO. 1	STATE PARK A NO. 1
LOCATION	SEC. 28, T8N, R11W	SEC. 18, T6N, R9W	SEC. 19, T5S, R3E
OWNER	GHK CO.	PCX CORP.	COTTON PETROLEUM CORP.
COMPLETED	09/19/82	06/16/82	12/02/82
SAMPLED	04/--/83	05/13/83	07/26/83
FORMATION	PENN-RED FORK	PENN-SPRINGER	PENN-GODDARD
GEOLOGIC PROVINCE CODE	360	360	350
DEPTH, FEET	14336	18554	17405
WELLHEAD PRESSURE,PSIG	9700	4100	13500
OPEN FLOW, MCFD	1200	3000	3000
COMPONENT, MOLE PCT			
METHANE	84.9	95.3	96.2
ETHANE	9.2	1.6	1.1
PROPANE	3.2	0.1	0.1
N-BUTANE	0.4	0.1	0.1
ISOBUTANE	0.3	0.0	0.0
N-PENTANE	0.1	0.2	0.1
ISOPENTANE	0.2	0.1	TRACE
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	0.6	0.3	0.6
OXYGEN	0.0	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.2	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.7	1.7	1.4
HELIUM	0.03	0.02	0.02
HEATING VALUE*	1150	1022	1011
SPECIFIC GRAVITY	0.659	0.591	0.581

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 148 SAMPLE 16793	INDEX 149 SAMPLE 17129	INDEX 150 SAMPLE 16877
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CLEVELAND	CREEK	CUSTER
FIELD	NORMAN NW	BIG POND S	ALEDO SW
WELL NAME	BOSWELL NO. 1	MANES NO. 1	BAKER NO. 1-31
LOCATION	SEC. 7, T9N, R3W	SEC. 12, T14N, R7E	SEC. 31, T15N, R19W
OWNER	NATIONAL OIL CO.	MAHAN-ROWSEY INC.	COASTAL OIL & GAS CORP.
COMPLETED	02/--/83	08/26/81	06/--/82
SAMPLED	03/07/83	10/26/83	04/13/83
FORMATION	ORDO-VIOLA & DEVO-HUNTON	PENN-UNCONFORMITY SAND	PENN-CHEROKEE
GEOLOGIC PROVINCE CODE	355	355	360
DEPTH, FEET	8539	3368	11251
WELLHEAD PRESSURE,PSIG	350	1054	6095
OPEN FLOW, MCFD	1667	1500	4737
COMPONENT, MOLE PCT			
METHANE	73.2	83.4	86.5
ETHANE	8.3	8.2	8.3
PROPANE	5.1	2.6	2.6
N-BUTANE	2.0	0.8	0.4
ISOBUTANE	0.9	0.2	0.1
N-PENTANE	0.6	0.2	0.1
ISOPENTANE	1.1	0.4	0.1
CYCLOPENTANE	0.3	0.1	TRACE
HEXANES PLUS	0.5	0.2	TRACE
NITROGEN	6.0	3.5	0.7
OXYGEN	1.4	0.2	0.1
ARGON	0.1	TRACE	TRACE
HYDROGEN	0.2	0.1	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	TRACE	0.7
HELIUM	0.03	0.06	TRACE
HEATING VALUE*	1231	1133	1118
SPECIFIC GRAVITY	0.777	0.670	0.641

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 151 SAMPLE 16862	INDEX 152 SAMPLE 16838	INDEX 153 SAMPLE 16955
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CUSTER	CUSTER	CUSTER
FIELD	ANTHON SE	BATEER-CUSTER NW	BUTLER NW
WELL NAME	GOODWIN NO. 1	HUBBART NO. 1	WEIMS NO. 1-16
LOCATION	SEC. 18, T14N, R16W	SEC. 19, T14N, R19W	SEC. 16, T14N, R19W
OWNER	OLD DOMINION OIL CORP.	SANTA FE MINERALS, INC.	INEXCO OIL CO.
COMPLETED	07/25/82	05/--/82	05/26/83
SAMPLED	04/05/83	03/--/83	05/26/83
FORMATION	PENN-SPRINGER SAND	PENN-RED FORK	PENN-MORROW
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	13276	12272	15208
WELLHEAD PRESSURE,PSIG	2844	5750	2800
OPEN FLOW, MCFD	6408	3100	3229
COMPONENT, MOLE PCT			
METHANE	93.7	85.4	95.6
ETHANE	3.5	8.0	0.6
PROPANE	0.6	2.8	0.1
N-BUTANE	0.1	0.7	0.0
ISOBUTANE	0.1	0.4	0.0
N-PENTANE	TRACE	0.1	0.0
ISOPENTANE	TRACE	0.4	0.0
CYCLOPENTANE	TRACE	0.3	0.0
HEXANES PLUS	0.1	0.3	0.0
NITROGEN	0.3	0.5	0.3
OXYGEN	0.1	0.0	TRACE
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.2	0.2	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.1	0.8	3.1
HELIUM	0.02	0.02	0.02
HEATING VALUE*	1040	1167	983
SPECIFIC GRAVITY	0.594	0.670	0.588

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 154 SAMPLE 16875	INDEX 155 SAMPLE 16971	INDEX 156 SAMPLE 16956
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CUSTER	CUSTER	CUSTER
FIELD	CARPENTER E	CLINTON	CLINTON E
WELL NAME	KEPHART NO. 1-20	STOCKTON NO. 1-19	KAISER NO. 1-16
LOCATION	SEC. 20, T12N, R20W	SEC. 19, T12N, R17W	SEC. 16, T12N, R15W
OWNER	GHK CO.	AN-SON CORP.	INEXCO OIL CO.
COMPLETED	04/12/82	09/19/82	05/26/83
SAMPLED	04/11/83	06/02/83	05/26/83
FORMATION	PENN-RED FORK	PENN-RED FORK	PENN-CHEROKEE
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	13735	12732	12586
WELLHEAD PRESSURE,PSIG	8700	5000	6000
OPEN FLOW, MCFD	3148	4583	6351
COMPONENT, MOLE PCT			
METHANE	87.8	80.4	83.5
ETHANE	6.6	7.7	8.6
PROPANE	2.2	3.0	3.8
N-BUTANE	0.5	0.7	0.9
ISOBUTANE	0.4	0.4	0.5
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.4	0.5	0.5
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.2	0.2
NITROGEN	0.5	4.5	0.6
OXYGEN	0.0	1.1	TRACE
ARGON	TRACE	0.1	TRACE
HYDROGEN	0.2	0.2	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.2	0.9	0.8
HELIUM	0.02	0.03	0.02
HEATING VALUE*	1131	1108	1186
SPECIFIC GRAVITY	0.653	0.690	0.683

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 157 SAMPLE 16852	INDEX 158 SAMPLE 16980	INDEX 159 SAMPLE 16854
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CUSTER	CUSTER	CUSTER
FIELD	CLINTON NW	HAMMON	PARKERSBURGH
WELL NAME	LEWIS NO. 8-1	STINSON NO. 1-6	STRATTON FARMS NO. 10-1
LOCATION	SEC. 8, T12N, R17W	SEC. 6, T13N, R20W	SEC. 10, T12N, R17W
OWNER	WOODS PETROLEUM CORP.	HELMERICH & PAYNE, INC.	WOODS PETROLEUM CORP.
COMPLETED	08/27/81	04/22/82	07/12/82
SAMPLED	03/31/83	06/17/83	03/31/83
FORMATION	PENN-ATOKA	PENN-RED FORK	PENN-ATOKA
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	14666	13089	14296
WELLHEAD PRESSURE,PSIG	1000	7527	9000
OPEN FLOW, MCFD	100	4090	3000
COMPONENT, MOLE PCT			
METHANE	96.0	88.8	93.0
ETHANE	1.8	6.1	3.3
PROPANE	0.2	1.9	0.7
N-BUTANE	0.0	0.4	0.2
ISOBUTANE	0.0	0.4	0.1
N-PENTANE	0.0	0.1	0.0
ISOPENTANE	0.0	0.3	0.1
CYCLOPENTANE	0.0	TRACE	0.1
HEXANES PLUS	0.0	0.1	0.2
NITROGEN	0.4	0.7	0.5
OXYGEN	TRACE	0.1	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.3	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.3	0.9	1.6
HELIUM	0.02	0.02	0.02
HEATING VALUE*	1011	1108	1048
SPECIFIC GRAVITY	0.578	0.637	0.609

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 160 SAMPLE 16844	INDEX 161 SAMPLE 17093	INDEX 162 SAMPLE 16851
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CUSTER	CUSTER	CUSTER
FIELD	PUTNAM	WEATHERFORD	WEBB SW
WELL NAME	GANNAWAY NO. 1	HUNNICUTT UNIT	STRATTON FARMS NO. 26-1
LOCATION	SEC. 34, T14N, R17W	SEC. 26, T12N, R14W	SEC. 26, T12N, R18W
OWNER	HARPER OIL CO.	AMOCO PRODUCTION CO.	WOODS PETROLEUM CORP.
COMPLETED	07/13/82	08/12/82	08/10/82
SAMPLED	03/25/83	10/17/83	03/31/83
FORMATION	PENN-MORROW	MISS-SPRINGER BRITT SAND	PENN-ATOKA
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	14250	13250	15200
WELLHEAD PRESSURE,PSIG	8650	11125	9000
OPEN FLOW, MCFD	4634	NOT GIVEN	2000
COMPONENT, MOLE PCT			
METHANE	95.2	97.1	96.7
ETHANE	1.8	1.1	1.2
PROPANE	0.3	0.2	0.1
N-BUTANE	0.1	0.0	0.0
ISOBUTANE	TRACE	0.0	0.0
N-PENTANE	0.1	0.0	0.0
ISOPENTANE	0.1	0.0	0.0
CYCLOPENTANE	0.1	0.0	0.0
HEXANES PLUS	0.2	0.0	0.0
NITROGEN	0.3	0.1	0.3
OXYGEN	TRACE	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	TRACE	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.6	1.4	1.4
HELIUM	0.02	0.02	0.02
HEATING VALUE*	1031	1009	1004
SPECIFIC GRAVITY	0.594	0.575	0.575

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 163 SAMPLE 16798	INDEX 164 SAMPLE 16969	INDEX 165 SAMPLE 17130
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CUSTER	DEWEY	DEWEY
FIELD	WILDCAT	PUTNAM	SOONER TREND
WELL NAME	BAKER NO. 21-1	LEROY DENNIS NO. 1	VANDERWORK NO. 1
LOCATION	SEC. 21, T13N, R19W	SEC. 33, T19N, R17W	SEC. 4, T18N, R17W
OWNER	CONTINENTAL RESOURCES CORP.	ENERGY RESERVES GROUP, INC.	SCARTH OIL & GAS CO.
COMPLETED	03/08/82	06/06/83	03/--/82
SAMPLED	03/--/83	06/06/83	12/09/81
FORMATION	PENN-CHEROKEE	MISS-OSAGE L	PENN-MORROW
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	13224	11846	9800
WELLHEAD PRESSURE,PSIG	5600	3700	1280
OPEN FLOW, MCFD	2702	1800	228
COMPONENT, MOLE PCT			
METHANE	90.3	88.9	93.2
ETHANE	4.8	4.0	3.3
PROPANE	1.7	1.9	0.9
N-BUTANE	0.4	0.9	0.2
ISOBUTANE	0.4	0.4	0.1
N-PENTANE	0.1	0.3	0.1
ISOPENTANE	0.2	0.4	0.1
CYCLOPENTANE	0.1	0.2	TRACE
HEXANES PLUS	0.3	0.4	0.1
NITROGEN	0.5	0.8	0.8
OXYGEN	0.1	TRACE	0.2
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.2	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.8	1.4	0.9
HELIUM	0.02	0.03	0.04
HEATING VALUE*	1104	1124	1050
SPECIFIC GRAVITY	0.631	0.655	0.603

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 166 SAMPLE 16884	INDEX 167 SAMPLE 16950	INDEX 168 SAMPLE 16769
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	ELLIS	ELLIS	GRADY
FIELD	IOLAND N	WILDCAT	BLANCHARD W
WELL NAME	CHARLES HARRIS NO. 1-27	BUCKLES NO. 1	HALL NO. 1
LOCATION	SEC. 27, T18N, R22W	SEC. 7, T19N, R24W	SEC. 30, T8N, R5W
OWNER	AMQUEST CORP.	KAISER-FRANCIS OIL CO.	ANDERMAN SMITH OPER. CO,INC
COMPLETED	04/21/83	--/--/82	02/14/83
SAMPLED	04/21/83	05/17/83	02/14/83
FORMATION	PENN-MORROW	PENN-MORROW	PENN-OSBORNE
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	11943	NOT GIVEN	10474
WELLHEAD PRESSURE,PSIG	3200	2300	1500
OPEN FLOW, MCFD	3027	250	1750
COMPONENT, MOLE PCT			
METHANE	92.5	92.5	87.2
ETHANE	3.4	2.4	6.3
PROPANE	0.9	0.6	2.7
N-BUTANE	0.2	0.2	0.8
ISOBUTANE	0.3	0.1	0.3
N-PENTANE	0.1	0.1	0.2
ISOPENTANE	0.2	0.1	0.4
CYCLOPENTANE	0.1	TRACE	0.1
HEXANES PLUS	0.3	0.1	0.2
NITROGEN	0.4	1.5	1.0
OXYGEN	0.0	0.1	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.3	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.5	2.0	0.6
HELIUM	0.04	0.03	0.05
HEATING VALUE*	1071	1020	1144
SPECIFIC GRAVITY	0.619	0.608	0.657

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 169 SAMPLE 16906	INDEX 170 SAMPLE 16762	INDEX 171 SAMPLE 17084
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	GRADY	GRADY	HASKELL
FIELD	CHICKASHA W	RUSH SPRINGS SW	STIGLER W
WELL NAME	THOMAS NO. 1-7	ROBERTS A NO. 1	GOLLON NO. 1-23
LOCATION	SEC. 7, T6N, R7W	SEC. 30, T4N, R7W	SEC. 23, T9N, R19E
OWNER	DEVON ENERGY CORP.	COTTON PETROLEUM CORP.	EARLSBORO OIL & GAS CO., INC
COMPLETED	07/20/82	06/--/82	10/20/82
SAMPLED	04/28/83	01/31/83	10/05/83
FORMATION	PENN-WADE U	PENN-BRITT	DEVO-HUNTON
GEOLOGIC PROVINCE CODE	360	360	345
DEPTH, FEET	8440	17742	4816
WELLHEAD PRESSURE,PSIG	2175	9000	2175
OPEN FLOW, MCFD	6500	4250	29000
COMPONENT, MOLE PCT			
METHANE	91.4	94.9	93.7
ETHANE	2.8	2.7	1.2
PROPANE	1.5	0.4	0.1
N-BUTANE	0.5	0.1	0.0
ISOBUTANE	0.2	0.0	0.0
N-PENTANE	0.1	TRACE	0.0
ISOPENTANE	0.3	TRACE	0.0
CYCLOPENTANE	0.1	TRACE	0.0
HEXANES PLUS	0.1	0.1	0.0
NITROGEN	2.4	0.3	3.7
OXYGEN	0.0	TRACE	0.2
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.2	0.2	0.6
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	1.1	0.3
HELIUM	0.09	0.02	0.14
HEATING VALUE*	1065	1029	975
SPECIFIC GRAVITY	0.616	0.586	0.578

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 172 SAMPLE 16758	INDEX 173 SAMPLE 16763	INDEX 174 SAMPLE 16791
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	LEFLORE	LEFLORE	LINCOLN
FIELD	POCOLA	SPIRO N	DAVENPORT E
WELL NAME	BLACKMAN NO. 2	TURMAN NO. 1	JOHN ROBERSON NO. 1-A
LOCATION	SEC. 26, T9N, R26E	SEC. 11, T9N, R25E	SEC. 12, T14N, R5E
OWNER	SAMSON RESOURCES CO.	SAMSON RESOURCES CO.	TIERRA ENERGY CORP.
COMPLETED	03/10/82	05/--/82	12/03/82
SAMPLED	01/27/83	02/03/83	03/03/83
FORMATION	PENN-SPIRO	PENN-SPIRO	PENN-BARTLESVILLE
GEOLOGIC PROVINCE CODE	850	345	355
DEPTH, FEET	6868	7876	3720
WELLHEAD PRESSURE,PSIG	685	1670	1150
OPEN FLOW, MCFD	1800	5600	2100
COMPONENT, MOLE PCT			
METHANE	93.7	95.0	86.8
ETHANE	0.8	1.1	3.9
PROPANE	0.1	0.1	1.9
N-BUTANE	0.0	0.0	0.6
ISOBUTANE	0.0	0.0	0.2
N-PENTANE	0.0	0.0	0.2
ISOPENTANE	0.0	0.0	0.2
CYCLOPENTANE	0.0	0.0	0.2
HEXANES PLUS	0.0	0.0	0.2
NITROGEN	0.4	0.4	5.4
OXYGEN	0.1	0.1	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.3	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	4.7	3.0	0.1
HELIUM	0.10	0.09	0.10
HEATING VALUE*	967	986	1061
SPECIFIC GRAVITY	0.607	0.591	0.643

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 175 SAMPLE 16967	INDEX 176 SAMPLE 16974	INDEX 177 SAMPLE 17068
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	LINCOLN	MC INTOSH	OKFUSKEE
FIELD	WELLSTON S	SALEM SE	SCOTT GAS AREA
WELL NAME	VAN GUNDY NO. 1-36	WELLS NO. 1-11	MAGNESS NO. 1-10
LOCATION	SEC. 36, T14N, R2E	SEC. 12, T10N, R13E	SEC. 10, T10N, R10E
OWNER	PSEC, INC.	HOLD OIL CORP.	JORDAN OIL & GAS CO.
COMPLETED	07/09/82	02/16/83	08/12/82
SAMPLED	05/25/83	06/13/83	09/--/83
FORMATION	PENN-CLEVELAND-JONES	PENN-GILCREASE	PENN-BARTLESVILLE
GEOLOGIC PROVINCE CODE	355	355	355
DEPTH, FEET	4040	2712	2050
WELLHEAD PRESSURE,PSIG	241	1164	400
OPEN FLOW, MCFD	627	2308	600
COMPONENT, MOLE PCT			
METHANE	81.2	81.5	81.1
ETHANE	7.4	8.3	3.2
PROPANE	3.7	4.6	2.3
N-BUTANE	1.5	1.1	0.0
ISOBUTANE	0.4	0.9	0.6
N-PENTANE	0.5	0.2	0.2
ISOPENTANE	0.6	0.8	0.0
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.3	0.4	0.1
NITROGEN	3.8	1.4	11.8
OXYGEN	TRACE	0.1	0.2
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.3	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.2	0.1
HELIUM	0.07	0.07	0.18
HEATING VALUE*	1182	1229	973
SPECIFIC GRAVITY	0.702	0.709	0.658

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 178 SAMPLE 17027	INDEX 179 SAMPLE 16751	INDEX 180 SAMPLE 16853
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	PAWNEE	ROGER MILLS	ROGER MILLS
FIELD	MARAMEC E	LEEDEY SW	LEEDEY SW
WELL NAME	OKLAHOMA STATE "H" NO. 1	K. H. GWARTNEY NO. 1-30	PETERSON NO. 10-1
LOCATION	SEC. 13, T20N, R6E	SEC. 30, T14N, R22W	SEC. 10, T15N, R21W
OWNER	BARUCH-FOSTER CORP.	DIAMOND SHAMROCK CORP.	WOODS PETROLEUM CORP.
COMPLETED	09/24/82	07/20/82	04/23/82
SAMPLED	08/29/83	01/14/83	04/01/83
FORMATION	PENN-RED FORK L	PENN-RED FORK	PENN-PRUE
GEOLOGIC PROVINCE CODE	355	360	360
DEPTH, FEET	3023	12554	11022
WELLHEAD PRESSURE,PSIG	600	6210	5100
OPEN FLOW, MCFD	420	10567	3000
COMPONENT, MOLE PCT			
METHANE	67.5	89.8	82.8
ETHANE	6.9	6.0	8.7
PROPANE	4.6	1.2	3.3
N-BUTANE	1.3	0.2	0.8
ISOBUTANE	0.5	0.2	0.7
N-PENTANE	0.2	0.1	0.2
ISOPENTANE	0.5	0.1	0.6
CYCLOPENTANE	0.1	TRACE	0.4
HEXANES PLUS	0.1	0.1	0.8
NITROGEN	17.4	0.4	0.5
OXYGEN	0.0	0.1	0.0
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.2	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	1.4	1.1
HELIUM	0.18	0.02	0.03
HEATING VALUE*	1027	1076	1222
SPECIFIC GRAVITY	0.752	0.622	0.708

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 181 SAMPLE 16951	INDEX 182 SAMPLE 16767	INDEX 183 SAMPLE 16766
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	SEMINOLE	STEPHENS	STEPHENS
FIELD	BETHEL	MARLOW W	MARLOW W
WELL NAME	GARDNER NO. 1	M. W. PAYNE NO. 1	MAMIE NO. 1-36
LOCATION	SEC. 1, T9N, R7E	SEC. 35, T2N, R8W	SEC. 36, T2N, R8W
OWNER	PAWNEE PETROLEUM CO.	GULF OIL CORP.	GULF OIL CORP.
COMPLETED	03/07/83	12/28/81	10/12/82
SAMPLED	05/23/83	02/08/83	02/08/83
FORMATION	PENN-GILCREASE	PENN-BLAKE SAND	PENN-HOXBAR L
GEOLOGIC PROVINCE CODE	355	350	350
DEPTH, FEET	3602	4440	9542
WELLHEAD PRESSURE,PSIG	1240	1435	4429
OPEN FLOW, MCFD	1676	6000	15000
COMPONENT, MOLE PCT			
METHANE	73.0	76.1	86.7
ETHANE	9.0	4.1	6.0
PROPANE	4.9	2.4	2.4
N-BUTANE	1.4	0.8	0.7
ISOBUTANE	0.4	0.3	0.5
N-PENTANE	0.2	0.2	0.2
ISOPENTANE	0.6	0.4	0.6
CYCLOPENTANE	0.1	0.1	0.4
HEXANES PLUS	0.2	0.2	0.7
NITROGEN	9.6	13.4	1.3
OXYGEN	0.0	1.5	0.2
ARGON	TRACE	0.1	0.0
HYDROGEN	0.2	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	0.2
HELIUM	0.15	0.04	0.01
HEATING VALUE*	1137	984	1174
SPECIFIC GRAVITY	0.736	0.698	0.674

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 184 SAMPLE 17020	INDEX 185 SAMPLE 17132	INDEX 186 SAMPLE 17131
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	TEXAS	TEXAS	TEXAS
FIELD	CAMRICK	LORENA E	LORENA E
WELL NAME	ETTER NO. B-2	APSLEY NO. B1	HOOD NO. B1
LOCATION	SEC. 34, T2N, R18ECM	SEC. 24, T6N, R19ECM	SEC. 25, T6N, R19ECM
OWNER	KN ENERGY, INC.	ANADARKO PRODUCTION CO.	ANADARKO PRODUCTION CO.
COMPLETED	08/20/82	NOT GIVEN	08/28/82
SAMPLED	08/24/83	11/02/83	11/02/83
FORMATION	PENN-MORROW L	MISS-CHESTER	MISS-CHESTER
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	6634	6694	6680
WELLHEAD PRESSURE,PSIG	1314	1809	1816
OPEN FLOW, MCFD	2370	7109	9349
COMPONENT, MOLE PCT			
METHANE	88.7	80.7	81.0
ETHANE	3.8	6.8	6.8
PROPANE	2.0	3.3	3.3
N-BUTANE	0.9	1.3	1.3
ISOBUTANE	0.3	0.6	0.6
N-PENTANE	0.3	0.4	0.4
ISOPENTANE	0.4	0.3	0.4
CYCLOPENTANE	0.2	0.1	0.1
HEXANES PLUS	0.4	0.2	0.2
NITROGEN	2.2	5.7	5.4
OXYGEN	0.1	0.1	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	TRACE	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	0.4	0.4
HELIUM	0.15	0.10	0.09
HEATING VALUE*	1118	1133	1140
SPECIFIC GRAVITY	0.649	0.698	0.698

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 187 SAMPLE 17078	INDEX 188 SAMPLE 17079	INDEX 189 SAMPLE 16970
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	WASHITA	WASHITA	WASHITA
FIELD	BESSIE N	BESSIE N	BRAITHWAITE NW
WELL NAME	STEHR NO. 1	HOEPFNER NO. 1	WALTON NO. 1-10
LOCATION	SEC. 16, T11N, R17W	SEC. 31, T11N, R17W	SEC. 10, T11N, R18W
OWNER	ROBINSON BROS. DRLG. CO.	ROBINSON BROS. DRLG. CO.	AN-SON CORP.
COMPLETED	11/--/82	11/--/82	06/20/82
SAMPLED	08/22/83	08/27/83	06/02/83
FORMATION	PENN-MORROW	PENN-DES MOINES	PENN-MORROW
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	16432	12630	16455
WELLHEAD PRESSURE,PSIG	9500	5700	9329
OPEN FLOW, MCFD	NOT GIVEN	NOT GIVEN	4465
COMPONENT, MOLE PCT			
METHANE	96.4	75.9	96.8
ETHANE	1.3	9.5	0.9
PROPANE	0.2	5.6	0.1
N-BUTANE	0.0	2.2	0.0
ISOBUTANE	0.0	1.0	0.0
N-PENTANE	0.0	0.4	0.0
ISOPENTANE	0.0	1.8	0.0
CYCLOPENTANE	0.0	0.3	0.0
HEXANES PLUS	0.0	0.7	0.0
NITROGEN	0.5	1.7	0.3
OXYGEN	0.0	0.1	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	0.3	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.3	0.3	1.5
HELIUM	0.02	0.04	0.03
HEATING VALUE*	1006	1334	1000
SPECIFIC GRAVITY	0.576	0.779	0.574

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 190 SAMPLE 16658	INDEX 191 SAMPLE 16908	INDEX 192 SAMPLE 16863
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	WASHITA	WASHITA	WOODWARD
FIELD	BURNS FLAT SW	RAINEY NE	MOORELAND
WELL NAME	MAUDE G. BIRCKETT NO. 2	BACCUS NO. 1-8	HINES NO. 1-29
LOCATION	SEC. 26, T10N, R19W	SEC. 8, T8N, R16W	SEC. 29, T23N, R19W
OWNER	ENSEARCH EXPLORATION, INC.	HELMERICH & PAYNE, INC.	OLD DOMINION OIL CORP.
COMPLETED	09/--/81	10/04/82	08/12/82
SAMPLED	09/22/82	04/28/83	04/05/83
FORMATION	PERM-GRANITE WASH	PENN-MORROW	PENN-MORROW
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	12000	12380	7609
WELLHEAD PRESSURE,PSIG	5000	1793	2876
OPEN FLOW, MCFD	1500	2268	2620
COMPONENT, MOLE PCT			
METHANE	89.7	87.2	90.8
ETHANE	5.0	5.7	4.1
PROPANE	2.5	3.6	1.8
N-BUTANE	0.8	1.0	0.6
ISOBUTANE	0.4	0.4	0.3
N-PENTANE	0.2	0.2	0.1
ISOPENTANE	0.3	0.4	0.4
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.2	0.3
NITROGEN	0.5	0.7	0.7
OXYGEN	0.0	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	0.4	0.5
HELIUM	0.02	0.03	0.08
HEATING VALUE*	1139	1166	1111
SPECIFIC GRAVITY	0.645	0.665	0.632

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 193 SAMPLE 16855	INDEX 194 SAMPLE 16988	INDEX 195 SAMPLE 16898
STATE	PENNSYLVANIA	TENNESSEE	TENNESSEE
COUNTY	CLEARFIELD	CAMPBELL	SCOTT
FIELD	LE CONTES MILLS	WILDCAT	WINONA
WELL NAME	COMMONWEALTH OF PA. 324 NO.1	KOPPERS NO. 8	S. RR-COHEN NO. 1
LOCATION	SEC. H. KNOBS QUAD.	SEC. 9, T2S, R63E	SEC. 20, T2S, R61E
OWNER	ADOBE OIL & GAS CORP.	PETROLEUM DEVELOPMENT CORP.	TENNESSEE LAND & EXPL. CO.
COMPLETED	01/13/83	05/15/81	08/01/79
SAMPLED	04/02/83	07/19/83	04/19/83
FORMATION	DEVO-ORISKANY	MISS-MONTEAGLE	MISS-MONTEAGLE
GEOLOGIC PROVINCE CODE	160	160	160
DEPTH, FEET	7210	2265	1730
WELLHEAD PRESSURE,PSIG	3550	120	500
OPEN FLOW, MCFD	5735	NOT GIVEN	4000
COMPONENT, MOLE PCT			
METHANE	96.9	93.3	79.4
ETHANE	2.0	2.2	9.3
PROPANE	0.1	0.5	3.6
N-BUTANE	TRACE	0.2	1.0
ISOBUTANE	TRACE	0.1	0.3
N-PENTANE	0.1	0.1	0.2
ISOPENTANE	0.0	0.1	0.3
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	0.4	2.5	4.7
OXYGEN	0.0	0.1	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.4	0.6
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	TRACE	0.1
HELIUM	0.02	0.26	0.35
HEATING VALUE*	1030	1026	1137
SPECIFIC GRAVITY	0.571	0.591	0.685

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 196 SAMPLE 16778	INDEX 197 SAMPLE 16779	INDEX 198 SAMPLE 17148
STATE	TEXAS	TEXAS	TEXAS
COUNTY	ANGELINA	ANGELINA	DE WITT
FIELD	CLAYTON	CLAYTON	DRY HOLLOW
WELL NAME	TEMPLE-EASTEX NO. 1, INLET	TEMPLE-EASTEX NO. 1, OUTLET	COPENHAVER NO. 1
LOCATION	JAMES G. W. CLAYTON, A-151	JAMES G. W. CLAYTON, A-151	NICHOLAS PECK SUR., A-383
OWNER	GETTY OIL CO.	GETTY OIL CO.	GULFSTREAM PETROLEUM CORP.
COMPLETED	05/10/82	05/10/82	02/--/83
SAMPLED	02/23/83	02/23/83	12/--/83
FORMATION	CRET-AUSTIN CHALK	CRET-AUSTIN CHALK	EOCE-WILCOX PECK SAND
GEOLOGIC PROVINCE CODE	260	260	220
DEPTH, FEET	8218	8218	11024
WELLHEAD PRESSURE,PSIG	3553	3553	5900
OPEN FLOW, MCFD	9000	9000	6948
COMPONENT, MOLE PCT			
METHANE	88.3	88.6	86.0
ETHANE	2.9	2.9	6.5
PROPANE	1.4	1.4	2.1
N-BUTANE	0.5	0.5	0.5
ISOBUTANE	0.2	0.2	0.3
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.3	0.2	0.3
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	2.4	2.4	0.0
OXYGEN	0.0	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	0.3	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	3.3	3.2	3.9
HELIUM	0.03	0.03	TRACE
HEATING VALUE*	1030	1028	1091
SPECIFIC GRAVITY	0.643	0.641	0.667

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 199 SAMPLE 16927	INDEX 200 SAMPLE 16772	INDEX 201 SAMPLE 16870
STATE	TEXAS	TEXAS	TEXAS
COUNTY	FORT BEND	GRAYSON	HEMPHILL
FIELD	KATY S	PARADISE COVE	CAST
WELL NAME	L. R. MORGAN NO. 1	W. STRICKLAND GAS UNIT NO.1	URSHEL EST. NO. 1
LOCATION	JAMES CONNER SUR., AB-157	JOSEPH STRICKLAND, A1068	DAVID CROCKETT SUR.
OWNER	AMAX PETROLEUM CORP.	AMER. QUASAR PET. CO. OF NM	MOBIL PRODUCING TX & NM, INC
COMPLETED	09/27/81	10/28/81	04/14/83
SAMPLED	05/11/83	02/17/83	04/14/83
FORMATION	CRET-WILCOX 1ST	PENN-DORNICK HILLS L	PENN-MORROW L
GEOLOGIC PROVINCE CODE	220	350	360
DEPTH, FEET	10270	12747	12394
WELLHEAD PRESSURE,PSIG	1400	2200	4200
OPEN FLOW, MCFD	14500	8056	805
COMPONENT, MOLE PCT			
METHANE	83.2	79.0	95.6
ETHANE	5.8	11.1	0.6
PROPANE	2.9	4.6	0.1
N-BUTANE	0.5	1.3	0.0
ISOBUTANE	1.5	0.5	0.0
N-PENTANE	0.2	0.3	0.0
ISOPENTANE	0.8	0.4	0.0
CYCLOPENTANE	0.6	0.1	0.0
HEXANES PLUS	0.9	0.2	0.0
NITROGEN	0.4	1.4	0.4
OXYGEN	0.1	0.0	0.1
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.2	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	2.8	0.8	3.0
HELIUM	TRACE	0.03	0.03
HEATING VALUE*	1201	1224	982
SPECIFIC GRAVITY	0.723	0.715	0.589

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 202 SAMPLE 16983	INDEX 203 SAMPLE 17061	INDEX 204 SAMPLE 16864
STATE	TEXAS	TEXAS	TEXAS
COUNTY	HEMPHILL	HEMPHILL	JACK
FIELD	FELDMAN	WASHITA CREEK	ELLIS
WELL NAME	JONES ESTATE NO. 1-22	BOWERS NO. 5-A	ELLIS NO. 3
LOCATION	SEC. 22, BLK.1, G&M SUR.	SEC.258, BLK.C, G&MMBA SUR.	JAMES J. WILLIAMS SUR.,A-877
OWNER	PETROLEUM INC.	E.T.S. ENTERPRISES, INC.	CORDOVA RESOURCES, INC.
COMPLETED	11/17/81	07/23/82	09/01/82
SAMPLED	07/13/83	09/13/83	04/05/83
FORMATION	PENN-DOUGLAS	PENN-MORROW U	PENN-CADDO LIME
GEOLOGIC PROVINCE CODE	360	360	420
DEPTH, FEET	7391	14380	4724
WELLHEAD PRESSURE,PSIG	1245	8438	217
OPEN FLOW, MCFD	422	10000	2400
COMPONENT, MOLE PCT			
METHANE	79.7	96.6	66.5
ETHANE	8.9	0.6	9.0
PROPANE	4.3	0.1	9.9
N-BUTANE	1.1	0.0	3.4
ISOBUTANE	0.6	0.0	1.2
N-PENTANE	0.2	0.0	0.5
ISOPENTANE	0.7	0.0	1.3
CYCLOPENTANE	TRACE	0.0	0.2
HEXANES PLUS	0.2	0.0	0.4
NITROGEN	3.7	0.2	6.9
OXYGEN	TRACE	0.0	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	0.3	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	2.2	0.4
HELIUM	0.11	0.02	0.11
HEATING VALUE*	1185	993	1353
SPECIFIC GRAVITY	0.706	0.579	0.848

* CALCULATED GROSS BTU PER CU FT. DRY. AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 205 SAMPLE 16752	INDEX 206 SAMPLE 16861	INDEX 207 SAMPLE 16968
STATE	TEXAS	TEXAS	TEXAS
COUNTY	JEFFERSON	KENEDY	LIPSCOMB
FIELD	DEVIL	VIBORAS	BRADFORD
WELL NAME	WINZER UNIT NO. 1	SANTA FE RCH J PASTURE NO.27	CRUISE "E" NO. 2
LOCATION	W. H. BALDWIN SUR., A-652	SAN SALVADOR DEL TULE GRT.A1	SEC.768, BLK.43, H&TC SUR.
OWNER	MCCORMICK OPERATING CO.	EXXON CO. USA	PHILLIPS PETROLEUM CO.
COMPLETED	07/07/82	07/--/82	03/03/83
SAMPLED	01/17/83	03/28/83	05/31/83
FORMATION	OLIG-DISCORBIS	OLIG-FRIO 9400 FT. SAND	PENN-CLEVELAND
GEOLOGIC PROVINCE CODE	220	220	360
DEPTH, FEET	12516	9404	7390
WELLHEAD PRESSURE,PSIG	9000	1800	2049
OPEN FLOW, MCFD	45500	1044	4100
COMPONENT, MOLE PCT			
METHANE	93.4	91.7	87.9
ETHANE	1.7	2.9	6.2
PROPANE	0.3	1.5	2.2
N-BUTANE	0.1	0.6	0.7
ISOBUTANE	0.1	0.6	0.3
N-PENTANE	TRACE	0.2	0.3
ISOPENTANE	TRACE	0.3	0.2
CYCLOPENTANE	TRACE	TRACE	0.2
HEXANES PLUS	0.1	0.3	0.5
NITROGEN	0.2	1.3	0.5
OXYGEN	TRACE	0.0	0.0
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.2	0.2	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	3.9	0.1	0.6
HELIUM	TRACE	TRACE	0.06
HEATING VALUE*	997	1098	1148
SPECIFIC GRAVITY	0.609	0.623	0.654

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 208 SAMPLE 17094	INDEX 209 SAMPLE 16995	INDEX 210 SAMPLE 17021
STATE	TEXAS	TEXAS	TEXAS
COUNTY	LIPSCOMB	LIPSCOMB	LOVING
FIELD	FRASS SE	WILDCAT	PINAL DOME
WELL NAME	THREE SISTERS NO. 1	LYNN NO. 1	GLEN S. BRUNSON NO. 17-1
LOCATION	SEC. 72, BLK.10, H&TB SUR.	SEC.557, BLK.43, H&TC SUR.	SEC. 17, PSL SUR.
OWNER	GEODYNE RESOURCES, INC.	JOE C. RICHARDSON	HUNT OIL CO.
COMPLETED	04/15/83	04/29/81	05/25/82
SAMPLED	10/17/83	07/20/83	08/23/83
FORMATION	PENN-MORROW L	PENN-CLEVELAND	PERM-WOLFCAMP L
GEOLOGIC PROVINCE CODE	360	360	430
DEPTH, FEET	8887	7430	15000
WELLHEAD PRESSURE,PSIG	2200	1050	10340
OPEN FLOW, MCFD	13500	3600	3500
COMPONENT, MOLE PCT			
METHANE	87.0	82.6	90.7
ETHANE	6.1	6.4	5.0
PROPANE	3.4	4.2	1.3
N-BUTANE	1.0	1.6	0.4
ISOBUTANE	0.5	0.5	0.4
N-PENTANE	0.2	0.3	0.1
ISOPENTANE	0.3	0.8	0.4
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.2	0.3
NITROGEN	0.4	2.0	0.6
OXYGEN	0.0	0.2	0.0
ARGON	0.0	TRACE	TRACE
HYDROGEN	TRACE	0.3	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.7	0.6	0.4
HELIUM	0.05	0.12	0.01
HEATING VALUE*	1165	1193	1110
SPECIFIC GRAVITY	0.666	0.701	0.628

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 211 SAMPLE 16781	INDEX 212 SAMPLE 16783	INDEX 213 SAMPLE 16895
STATE	TEXAS	TEXAS	TEXAS
COUNTY	MILAM	MILAM	NUECES
FIELD	CALIGULA	CALIGULA	WILDCAT
WELL NAME	CALIGULA-COFFIELD NO. 1	CALIGULA-COFFIELD NO. 1	STATE TRACT 6 NO. 1
LOCATION	W. W. HILL SUR., A-191	W. W. HILL SUR., A-191	STATE TRACT 6, NUECES BAY
OWNER	ENERGETICS, INC.	ENERGETICS, INC.	SANCHEZ-O'BRIEN CO.
COMPLETED	12/30/81	12/30/81	12/--/81
SAMPLED	02/28/83	02/28/83	04/21/83
FORMATION	EOCE-MIDWAY U	EOCE-MIDWAY L	OLIG-COMMONWEALTH
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	2262	2310	9928
WELLHEAD PRESSURE,PSIG	838	896	3450
OPEN FLOW, MCFD	660	846	4500
COMPONENT, MOLE PCT			
METHANE	97.0	97.2	83.7
ETHANE	0.4	0.4	6.6
PROPANE	0.1	0.1	3.3
N-BUTANE	TRACE	TRACE	1.1
ISOBUTANE	TRACE	TRACE	1.4
N-PENTANE	0.0	0.0	0.3
ISOPENTANE	0.1	0.1	1.0
CYCLOPENTANE	0.0	0.0	0.2
HEXANES PLUS	0.0	0.0	0.6
NITROGEN	1.9	1.7	0.4
OXYGEN	0.1	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.2	0.9
HELIUM	0.02	0.02	TRACE
HEATING VALUE*	997	999	1230
SPECIFIC GRAVITY	0.567	0.567	0.709

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 214 SAMPLE 17077	INDEX 215 SAMPLE 16886	INDEX 216 SAMPLE 16923
STATE	TEXAS	TEXAS	TEXAS
COUNTY	OCHILTREE	PECOS	ROBERTS
FIELD	SCROGGS	NUZ	CAT CREEK
WELL NAME	SCROGGS NO. 1-21	NUTT NO. 1-16	MORRISON NO. 3-8
LOCATION	SEC. 21, BLK. 45, H&TC SUR.	SEC. 16, BLK.125, T&STL SUR.	SEC. 8, BLK.44-W.J.SIMS SUR.
OWNER	NATURAL GAS ANADARKO, INC.	PENNZOIL CO.	TENNECO OIL CO.
COMPLETED	09/02/82	10/05/82	06/--/81
SAMPLED	09/22/83	04/22/83	05/03/83
FORMATION	MISS-CHESTER	PERM-WOLFCAMP	PENN-GRANITE WASH
GEOLOGIC PROVINCE CODE	360	430	360
DEPTH, FEET	7583	6576	181
WELLHEAD PRESSURE,PSIG	1888	1573	2100
OPEN FLOW, MCFD	1520	4200	2900
COMPONENT, MOLE PCT			
METHANE	84.1	91.1	75.5
ETHANE	5.3	3.6	11.8
PROPANE	4.1	1.5	6.5
N-BUTANE	1.5	0.5	1.9
ISOBUTANE	0.5	0.1	0.5
N-PENTANE	0.2	0.1	0.3
ISOPENTANE	0.8	0.3	0.7
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.1	0.2
NITROGEN	2.3	2.0	1.7
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.6	0.5	0.4
HELIUM	0.15	0.07	0.09
HEATING VALUE*	1178	1073	1283
SPECIFIC GRAVITY	0.692	0.621	0.749

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 217 SAMPLE 16775	INDEX 218 SAMPLE 17090	INDEX 219 SAMPLE 16879
STATE	TEXAS	TEXAS	TEXAS
COUNTY	STARR	WEBB	WHEELER
FIELD	CAPRICORN	CASA VERDE	ALLISON BRITT
WELL NAME	BARRERA EST. NCT-1 NO. 1	KILLAM-HURD-AMOCO-RANGE NO.2	BRITT NO. 7-2
LOCATION	F. DE LA GARZA 78, A-92	DMJ SANCHEZ PORCION 22 A-277	SEC. 7, BLK. 1, B&B SUR.
OWNER	TEXACO INC.	AMOCO PRODUCTION CO. (USA)	HNG OIL CO.
COMPLETED	05/20/82	12/24/81	03/--/82
SAMPLED	02/22/83	10/17/83	04/18/83
FORMATION	EOCE-QUEEN CITY 1ST	NOT GIVEN	PERM-GRANITE WASH
GEOLOGIC PROVINCE CODE	220	220	360
DEPTH, FEET	6240	6412	12235
WELLHEAD PRESSURE,PSIG	4025	3160	3100
OPEN FLOW, MCFD	7505	68000	850
COMPONENT, MOLE PCT			
METHANE	91.7	90.1	81.8
ETHANE	3.7	5.1	9.9
PROPANE	1.3	2.0	3.9
N-BUTANE	0.3	0.5	1.0
ISOBUTANE	0.3	0.4	0.5
N-PENTANE	0.0	0.1	0.2
ISOPENTANE	0.4	0.4	0.5
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.1	0.3	0.1
NITROGEN	0.5	0.4	1.2
OXYGEN	0.2	0.0	0.1
ARGON	TRACE	TRACE	0.3
HYDROGEN	0.3	TRACE	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.0	0.6	0.3
HELIUM	TRACE	TRACE	0.03
HEATING VALUE*	1076	1127	1193
SPECIFIC GRAVITY	0.618	0.640	0.691

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 220 SAMPLE 17011	INDEX 221 SAMPLE 16860	INDEX 222 SAMPLE 16843
STATE	TEXAS	TEXAS	TEXAS
COUNTY	WHEELER	WHEELER	YOUNG
FIELD	KEY	STILES RANCH	YOUNG CO. REGULAR
WELL NAME	DE WOLF NO. 2	MILLER NO. 2-1	J. B. DAWS EST.2378 NO. 4-S
LOCATION	SEC. 1, BLK. 2, B&B SUR.	SEC. 38, BLK. A3, H&GN SUR.	TE&L SUR., A-1095
OWNER	PETRO-LEWIS CORP.	HNS OIL CO.	ASHTOLA EXPLORATION CO.
COMPLETED	07/19/82	--/--/82	12/29/80
SAMPLED	08/19/83	04/06/83	03/21/83
FORMATION	PENN-MORROW U	PENN-ATOKA	PENN-MEGARGEL SAND
GEOLOGIC PROVINCE CODE	360	360	425
DEPTH, FEET	16670	15239	550
WELLHEAD PRESSURE,PSIG	2173	6833	225
OPEN FLOW, MCFD	3100	9500	3500
COMPONENT, MOLE PCT			
METHANE	96.6	94.1	64.7
ETHANE	0.5	2.7	1.3
PROPANE	TRACE	0.6	0.2
N-BUTANE	0.1	0.2	0.0
ISOBUTANE	0.0	0.1	0.0
N-PENTANE	TRACE	0.1	0.0
ISOPENTANE	TRACE	0.2	0.0
CYCLOPENTANE	TRACE	TRACE	0.0
HEXANES PLUS	0.1	0.1	0.0
NITROGEN	0.2	0.4	31.1
OXYGEN	0.1	0.1	1.1
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.3	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.9	1.0	0.1
HELIUM	0.01	0.02	1.17
HEATING VALUE*	997	1046	685
SPECIFIC GRAVITY	0.578	0.596	0.693

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 223 SAMPLE 16797	INDEX 224 SAMPLE 17133	INDEX 225 SAMPLE 17001
STATE	TEXAS	UTAH	UTAH
COUNTY	ZAPATA	EMERY	GRAND
FIELD	WILDCAT	GRASSY TRAIL	BAR X
WELL NAME	ROBERTO VELA NO. 1	FED. NO. 4-32	BAR X NO. 13
LOCATION	TC RR259, A-186	SEC. 4, T16S, R12E	SEC. 7, T17S, R26E
OWNER	PENNZOIL EXPL. & PROD. CO.	SKYLINE OIL CO.	TERRA RESOURCES INC.
COMPLETED	--/--/82	02/17/83	07/23/82
SAMPLED	03/--/83	11/02/83	07/27/83
FORMATION	EOCE-WILCOX	TRIA-MOENKOPI	JURA-MORRISON
GEOLOGIC PROVINCE CODE	220	585	585
DEPTH, FEET	8920	4258	2934
WELLHEAD PRESSURE,PSIG	NOT GIVEN	10	500
OPEN FLOW, MCFD	3156	6	2500
COMPONENT, MOLE PCT			
METHANE	82.0	28.1	89.8
ETHANE	6.9	2.3	5.3
PROPANE	0.1	1.0	1.4
N-BUTANE	0.1	0.5	0.4
ISOBUTANE	0.0	0.3	0.3
N-PENTANE	TRACE	0.2	0.1
ISOPENTANE	0.1	0.2	0.4
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	TRACE	0.3	0.2
NITROGEN	10.0	60.7	1.0
OXYGEN	2.7	0.0	0.0
ARGON	0.1	0.5	TRACE
HYDROGEN	0.2	0.5	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	3.8	4.6	0.6
HELIUM	TRACE	0.71	0.12
HEATING VALUE*	858	417	1101
SPECIFIC GRAVITY	0.656	0.904	0.630

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 226 SAMPLE 17083	INDEX 227 SAMPLE 17064	INDEX 228 SAMPLE 16774
STATE	UTAH	UTAH	UTAH
COUNTY	GRAND	GRAND	SAN JUAN
FIELD	BRYSON CANYON	MOON RIDGE	WILDCAT
WELL NAME	BRYSON CANYON UNIT NO. 15	ICE CANYON NO. 16-9	MUSTANG NO. 1
LOCATION	SEC. 15, T17S, R24E	SEC. 16, T16S, R21E	SEC. 27, T36S, R23E
OWNER	BEARTOOTH OIL & GAS CO.	BEARTOOTH OIL & GAS CO.	SKYLINE OIL CO.
COMPLETED	08/--/83	10/--/82	07/31/82
SAMPLED	10/03/83	09/15/83	02/22/83
FORMATION	CRET-DAKOTA & JURA-SALT WASH	CRET-DAKOTA	PENN-ISMAY
GEOLOGIC PROVINCE CODE	585	585	585
DEPTH, FEET	5180	9700	6152
WELLHEAD PRESSURE,PSIG	840	1465	2100
OPEN FLOW, MCFD	1423	2000	8900
COMPONENT, MOLE PCT			
METHANE	89.2	94.9	73.8
ETHANE	4.1	2.0	10.6
PROPANE	1.1	0.2	4.4
N-BUTANE	0.4	0.2	1.2
ISOBUTANE	0.3	0.0	0.5
N-PENTANE	0.2	0.2	0.2
ISOPENTANE	0.2	TRACE	0.5
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.1	0.2
NITROGEN	3.4	0.6	7.0
OXYGEN	0.0	0.1	1.1
ARGON	TRACE	TRACE	0.1
HYDROGEN	TRACE	0.3	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.8	1.3	0.1
HELIUM	0.15	0.03	0.03
HEATING VALUE*	1060	1028	1154
SPECIFIC GRAVITY	0.633	0.592	0.733

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 229 SAMPLE 16931	INDEX 230 SAMPLE 16907	INDEX 231 SAMPLE 17122
STATE	UTAH	UTAH	UTAH
COUNTY	SUMMIT	UINTAH	UINTAH
FIELD	PINEVIEW N	HORSESHOE BEND	MAIN CANYON
WELL NAME	LOGAN FED. NO. 1	HORSESHOE BEND FED. NO. 26-1	MAIN CANYON NO. 16-4-15-23
LOCATION	SEC. 26, T3N, R7E	SEC. 26, T6S, R21E	SEC. 3, T15S, R23E
OWNER	DAVIS OIL CO.	TETON ENERGY CO., INC.	COSEKA RESOURCES(U.S.A.)LTD.
COMPLETED	08/01/82	02/24/82	10/27/83
SAMPLED	05/02/83	04/15/83	10/27/83
FORMATION	JURA-NUGGET	EOCE-UINTA	CRET-DAKOTA
GEOLOGIC PROVINCE CODE	570	575	575
DEPTH, FEET	12804	3690	8489
WELLHEAD PRESSURE,PSIG	3975	1209	1321
OPEN FLOW, MCFD	2500	1969	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	74.0	98.3	86.1
ETHANE	14.5	0.5	6.6
PROPANE	5.2	0.1	1.7
N-BUTANE	0.9	0.0	0.4
ISOBUTANE	0.8	0.0	0.3
N-PENTANE	0.1	0.0	0.1
ISOPENTANE	0.5	0.0	0.1
CYCLOPENTANE	0.1	0.0	TRACE
HEXANES PLUS	0.2	0.0	0.1
NITROGEN	2.4	0.7	2.3
OXYGEN	0.1	TRACE	0.1
ARGON	TRACE	TRACE	1.0
HYDROGEN	0.2	0.3	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.1	TRACE	1.0
HELIUM	0.01	0.01	0.06
HEATING VALUE*	1242	1008	1072
SPECIFIC GRAVITY	0.743	0.559	0.648

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 232 SAMPLE 17046	INDEX 233 SAMPLE 17145	INDEX 234 SAMPLE 16737
STATE	UTAH	VIRGINIA	WEST VIRGINIA
COUNTY	UINTAH	SCOTT	FAYETTE
FIELD	ROOSEVELT	ROARING FORK	PAINT CREEK
WELL NAME	BOW VALLEY-UTE NO. 2-22A1E	HAGAN EST. NO. 10007	EASTERN GAS FUEL NO. 76
LOCATION	SEC. 22, T1S, R1E	FORT BLACKMORE QUAD.	VALLEY DIST. POWELLTON QUAD.
OWNER	BOW VALLEY EXPLORATION INC.	ANR PRODUCTION CO.	ASHLAND EXPLORATION CO.
COMPLETED	01/16/83	04/05/82	04/12/82
SAMPLED	08/15/83	12/13/83	12/17/82
FORMATION	EOCE-WASATCH	DEVO-SHALE	MISS-WEIR U
GEOLOGIC PROVINCE CODE	575	160	160
DEPTH, FEET	11941	4616	3236
WELLHEAD PRESSURE,PSIG	375	125	380
OPEN FLOW, MCFD	646	NOT GIVEN	8887
COMPONENT, MOLE PCT			
METHANE	73.0	72.1	94.1
ETHANE	14.1	4.0	3.9
PROPANE	5.4	0.8	0.6
N-BUTANE	1.7	0.2	0.2
ISOBUTANE	0.9	TRACE	0.1
N-PENTANE	0.4	0.1	TRACE
ISOPENTANE	1.7	TRACE	TRACE
CYCLOPENTANE	0.3	TRACE	TRACE
HEXANES PLUS	0.7	TRACE	0.1
NITROGEN	0.8	22.4	0.4
OXYGEN	TRACE	0.1	0.0
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.3	0.2	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.8	TRACE	0.1
HELIUM	TRACE	0.06	0.04
HEATING VALUE*	1358	834	1055
SPECIFIC GRAVITY	0.791	0.679	0.588

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 235 SAMPLE 16887	INDEX 236 SAMPLE 16742	INDEX 237 SAMPLE 17012
STATE	WEST VIRGINIA	WEST VIRGINIA	WEST VIRGINIA
COUNTY	FAYETTE	TYLER	WEBSTER
FIELD	WILDCAT	BEARSVILLE	FORT LICK DISTRICT
WELL NAME	NORTH HILLS GROUP NO. 1	W. M. MEREDITH NO. 1	MOWER LUMBER NO. 1768
LOCATION	FAYETTEVILLE DIST.	CENTERVILLE DIST.	SAMP QUAD.
OWNER	AMOCO PRODUCTION CO. (USA)	HAUGHT, INC.	UNION DRILLING INC.
COMPLETED	10/23/81	09/15/81	11/15/81
SAMPLED	04/20/83	12/20/82	08/18/83
FORMATION	MISS-WEIR	DEVO-SHALE	DEVO-BENSON
GEOLOGIC PROVINCE CODE	160	160	160
DEPTH, FEET	2636	2700	2772
WELLHEAD PRESSURE,PSIG	280	320	950
OPEN FLOW, MCFD	100	220	289
COMPONENT, MOLE PCT			
METHANE	87.1	82.4	91.0
ETHANE	2.2	4.7	1.9
PROPANE	0.2	2.3	0.2
N-BUTANE	0.1	1.1	0.0
ISOBUTANE	0.0	0.7	0.0
N-PENTANE	TRACE	0.4	0.0
ISOPENTANE	TRACE	0.6	0.0
CYCLOPENTANE	TRACE	0.1	0.0
HEXANES PLUS	0.1	0.4	0.0
NITROGEN	7.7	5.9	3.5
OXYGEN	1.8	0.4	0.1
ARGON	0.1	TRACE	TRACE
HYDROGEN	0.4	0.5	0.4
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.1	2.8
HELIUM	0.06	0.46	0.09
HEATING VALUE*	937	1108	962
SPECIFIC GRAVITY	0.613	0.683	0.606

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 238 SAMPLE 17092	INDEX 239 SAMPLE 17010	INDEX 240 SAMPLE 16794
STATE	WYOMING	WYOMING	WYOMING
COUNTY	CAMPBELL	CARBON	CARBON
FIELD	PORCUPINE	BARRELL SPRINGS E	SHERARD DOME
WELL NAME	FED. NO. 29-1	CIGE FED. NO. 1C-7-15-92	CENEX NO. 7-14
LOCATION	SEC. 29, T42N, R70W	SEC. 7, T15N, R92W	SEC. 14, T25N, R89W
OWNER	CZAR RESOURCES, INC.	SNYDER OIL CO.	CENEX
COMPLETED	07/--/82	09/28/83	06/--/82
SAMPLED	10/07/83	09/28/83	02/10/83
FORMATION	CRET-DAKOTA	CRET-MESA VERDE	CRET-FRONTIER 3RD
GEOLOGIC PROVINCE CODE	515	535	535
DEPTH, FEET	10400	8784	2306
WELLHEAD PRESSURE,PSIG	2150	3000	840
OPEN FLOW, MCFD	467	700	500
COMPONENT, MOLE PCT			
METHANE	78.6	82.9	98.2
ETHANE	11.3	8.1	0.2
PROPANE	4.2	2.5	TRACE
N-BUTANE	0.9	0.5	0.0
ISOBUTANE	0.5	0.3	0.0
N-PENTANE	0.2	0.1	0.0
ISOPENTANE	0.4	0.2	0.0
CYCLOPENTANE	0.2	TRACE	0.0
HEXANES PLUS	0.2	0.1	0.0
NITROGEN	1.9	0.6	0.8
OXYGEN	TRACE	0.1	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	0.3	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.6	4.2	0.4
HELIUM	0.03	TRACE	0.03
HEATING VALUE*	1198	1096	999
SPECIFIC GRAVITY	0.717	0.682	0.561

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 241 SAMPLE 16866	INDEX 242 SAMPLE 16799	INDEX 243 SAMPLE 16805
STATE	WYOMING	WYOMING	WYOMING
COUNTY	CARBON	CONVERSE	CONVERSE
FIELD	WILD ROSE	BIG MUDDY	BIG MUDDY
WELL NAME	CIGE FED. NO. 1C-30-17-93	R. B. WHITESIDE NO. 100	R. B. WHITESIDE NO. 96
LOCATION	SEC. 30, T17N, R93W	NOT GIVEN	NOT GIVEN
OWNER	SNYDER OIL CO.	CONOCO INC.	CONOCO INC.
COMPLETED	04/04/83	09/11/78	07/--/76
SAMPLED	04/04/83	03/09/83	03/15/83
FORMATION	CRET-MESA VERDE-ALMOND U	CRET-WALLCREEK 2ND	CRET-WALLCREEK
GEOLOGIC PROVINCE CODE	535	515	515
DEPTH, FEET	2447	3114	3201
WELLHEAD PRESSURE,PSIG	3450	NOT GIVEN	NOT GIVEN
OPEN FLOW, MCFD	3000	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	83.2	82.7	78.3
ETHANE	8.0	2.5	3.4
PROPANE	3.2	4.8	6.0
N-BUTANE	0.8	2.3	2.3
ISOBUTANE	0.6	1.7	1.7
N-PENTANE	0.1	0.4	0.3
ISOPENTANE	0.4	1.7	1.5
CYCLOPENTANE	0.1	0.4	0.3
HEXANES PLUS	0.1	0.6	0.5
NITROGEN	0.3	0.3	4.5
OXYGEN	TRACE	TRACE	0.0
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.2	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	2.9	2.3	0.9
HELIUM	TRACE	TRACE	0.07
HEATING VALUE*	1147	1278	1259
SPECIFIC GRAVITY	0.589	0.760	0.771

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 244 SAMPLE 17074	INDEX 245 SAMPLE 17141	INDEX 246 SAMPLE 16894
STATE	WYOMING	WYOMING	WYOMING
COUNTY	FREMONT	FREMONT	FREMONT
FIELD	LYSITE	MADDEN DEEP	MUDDY RIDGE
WELL NAME	LONG BUTTE UNIT NO. 25-1	HENDRY NO. 2-8	GOVT.-HORNBECK NO. 13-1
LOCATION	SEC. 25, T39N, R92W	SEC. 8, T38N, R90W	SEC. 13, T4N, R2E
OWNER	MONCRIEF OIL CO.	MONSANTO OIL CO.	GETTY OIL CO.
COMPLETED	10/17/82	06/14/82	01/31/83
SAMPLED	09/22/83	11/29/83	04/26/83
FORMATION	CRET-SUSSEX B	CRET-CODY	EOCE-FORT UNION
GEOLOGIC PROVINCE CODE	530	530	530
DEPTH, FEET	13596	17168	7012
WELLHEAD PRESSURE,PSIG	7080	7076	2600
OPEN FLOW, MCFD	2100	250000	1243
COMPONENT, MOLE PCT			
METHANE	96.0	96.8	90.0
ETHANE	0.1	0.1	6.1
PROPANE	TRACE	TRACE	0.8
N-BUTANE	0.0	0.0	0.3
ISOBUTANE	0.0	0.0	0.5
N-PENTANE	0.0	0.0	0.0
ISOPENTANE	0.0	0.0	0.5
CYCLOPENTANE	0.0	0.0	0.1
HEXANES PLUS	0.0	0.0	0.2
NITROGEN	0.2	0.1	0.6
OXYGEN	0.0	0.0	0.0
ARGON	0.0	0.0	TRACE
HYDROGEN	0.3	0.0	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	3.4	3.0	0.6
HELIUM	TRACE	TRACE	0.01
HEATING VALUE*	975	982	1105
SPECIFIC GRAVITY	0.587	0.585	0.628

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 247 SAMPLE 16893	INDEX 248 SAMPLE 16997	INDEX 249 SAMPLE 16926
STATE	WYOMING	WYOMING	WYOMING
COUNTY	FREMONT	LINCOLN	LINCOLN
FIELD	MUDDY RIDGE	FABIAN DITCH	HORSETRAP
WELL NAME	GOVT.-HORNBECK NO. 13-16F	FABIAN DITCH NO. 1-34	HORSETRAP NO. 1
LOCATION	SEC. 13, T4N, R2E	SEC. 34, T20N, R112W	SEC. 26, T23N, R115W
OWNER	GETTY OIL CO.	MARATHON OIL CO.	NATURAL GAS CORP. OF CALIF.
COMPLETED	02/15/83	NOT GIVEN	04/11/83
SAMPLED	04/26/83	05/03/83	05/05/83
FORMATION	EOCE-FORT UNION	CRET-FRONTIER 2ND	PENN-AMSDEN
GEOLOGIC PROVINCE CODE	530	535	535
DEPTH, FEET	7362	9600	5460
WELLHEAD PRESSURE,PSIG	2500	3250	2200
OPEN FLOW, MCFD	944	500	7600
COMPONENT, MOLE PCT			
METHANE	86.4	85.7	76.8
ETHANE	7.1	9.0	5.3
PROPANE	2.2	2.2	1.8
N-BUTANE	0.7	0.4	0.8
ISOBUTANE	1.0	0.3	0.4
N-PENTANE	0.2	TRACE	0.3
ISOPENTANE	0.9	0.4	0.4
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.3	0.1	0.4
NITROGEN	0.7	0.7	13.0
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.2	0.3	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	0.7	0.1
HELIUM	0.01	0.01	0.31
HEATING VALUE*	1183	1137	1015
SPECIFIC GRAVITY	0.673	0.651	0.695

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 250 SAMPLE 17058	INDEX 251 SAMPLE 16986	INDEX 252 SAMPLE 17050
STATE	WYOMING	WYOMING	WYOMING
COUNTY	NATRONA	NIOBRARA	SUBLETTE
FIELD	PINE MOUNTAIN	ANT HILLS N	CASTLE CREEK UNIT
WELL NAME	HAWKS-VIABLE FED. NO. 1	FED. NO. 32-12	CASTLE CREEK NO. 21-28
LOCATION	SEC. 26, T35N, R84W	SEC. 12, T37N, R63W	SEC. 28, T32N, R114W
OWNER	VIABLE RESOURCES INC.	MILESTONE PETROLEUM, INC.	CELERON OIL & GAS CO.
COMPLETED	08/11/83	06/24/82	07/22/82
SAMPLED	08/11/83	07/20/83	09/02/83
FORMATION	PENN-TENSLEEP	PENN-LEO	CRET-MESA VERDE
GEOLOGIC PROVINCE CODE	530	515	535
DEPTH, FEET	1758	6694	5252
WELLHEAD PRESSURE,PSIG	300	3475	1490
OPEN FLOW, MCFD	NOT GIVEN	421	3703
COMPONENT, MOLE PCT			
METHANE	90.1	54.1	89.8
ETHANE	3.2	11.6	5.3
PROPANE	0.3	7.2	1.9
N-BUTANE	0.1	4.0	0.5
ISOBUTANE	0.0	1.4	0.5
N-PENTANE	TRACE	1.2	0.1
ISOPENTANE	0.0	2.2	0.4
CYCLOPENTANE	TRACE	0.3	0.1
HEXANES PLUS	0.1	0.8	0.2
NITROGEN	4.5	5.7	0.8
OXYGEN	TRACE	0.3	TRACE
ARGON	0.1	TRACE	TRACE
HYDROGEN	0.3	0.3	0.3
HYDROGEN SULFIDE**	0.0	6.3	0.0
CARBON DIOXIDE	0.5	4.7	0.1
HELIUM	0.79	0.13	0.03
HEATING VALUE*	987	1364	1124
SPECIFIC GRAVITY	0.597	0.967	0.634

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 253 SAMPLE 16801	INDEX 254 SAMPLE 17091	INDEX 255 SAMPLE 16998
STATE	WYOMING	WYOMING	WYOMING
COUNTY	SUBLETTE	SUBLETTE	SWEETWATER
FIELD	CHIMNEY BUTTE	STAR CORRAL	PIPELINE CROSSING
WELL NAME	C-79-23	JOHNSON RIDGE NO. 6	PIPELINE CROSSING NO. 1-20
LOCATION	SEC. 23, T28N, R113W	SEC. 20, T30N, R113W	SEC. 20, T18N, R111W
OWNER	BELCO PETROLEUM CORP.	WEXPRO CO.	MARATHON OIL CO.
COMPLETED	09/14/82	07/14/82	06/--/82
SAMPLED	03/09/83	10/12/83	05/03/83
FORMATION	TERT-PALE	CRET-MESA VERDE	CRET-DAKOTA 1ST
GEOLOGIC PROVINCE CODE	535	535	535
DEPTH, FEET	2560	3106	10000
WELLHEAD PRESSURE,PSIG	1000	1200	2700
OPEN FLOW, MCFD	100	NOT GIVEN	1000
COMPONENT, MOLE PCT			
METHANE	85.7	84.5	85.6
ETHANE	4.0	7.8	6.7
PROPANE	3.8	3.1	2.1
N-BUTANE	1.3	0.7	0.4
ISOBUTANE	1.8	0.8	0.3
N-PENTANE	0.3	0.2	0.1
ISOPENTANE	1.1	0.2	0.3
CYCLOPENTANE	0.3	TRACE	TRACE
HEXANES PLUS	0.5	0.1	0.1
NITROGEN	0.5	2.0	0.8
OXYGEN	TRACE	0.2	TRACE
ARGON	TRACE	TRACE	2.3
HYDROGEN	0.2	TRACE	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	0.3	1.1
HELIUM	0.01	0.03	0.01
HEATING VALUE*	1240	1149	1088
SPECIFIC GRAVITY	0.709	0.669	0.661

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 256 SAMPLE 16925	INDEX 257 SAMPLE 17051	INDEX 258 SAMPLE 17147
STATE	WYOMING	WYOMING	WYOMING
COUNTY	SWEETWATER	SWEETWATER	UINTA
FIELD	TABLE ROCK	WILDCAT	CHURCH BUTTES
WELL NAME	TABLE ROCK UNIT NO. 37	WINDMILL DRAW UNIT NO. 3	CHURCH BUTTES UNIT NO. 36
LOCATION	SEC. 25, T19N, R98W	SEC. 12, T15N, R94W	SEC. 15, T17N, R112W
OWNER	TEXACO INC.	CITIES SERVICE OIL&GAS CORP.	WEXPRO
COMPLETED	05/07/82	10/15/81	11/12/82
SAMPLED	05/09/83	03/--/83	12/--/83
FORMATION	PENN-WEBER	CRET-MESA VERDE	CRET-FRONTIER
GEOLOGIC PROVINCE CODE	535	535	535
DEPTH, FEET	17240	10931	12160
WELLHEAD PRESSURE,PSIG	5380	2500	NOT GIVEN
OPEN FLOW, MCFD	1050	735	4361
COMPONENT, MOLE PCT			
METHANE	76.2	84.6	87.8
ETHANE	1.5	6.8	8.4
PROPANE	0.7	1.7	1.9
N-BUTANE	0.8	0.4	0.3
ISOBUTANE	0.5	0.5	0.3
N-PENTANE	0.6	TRACE	0.1
ISOPENTANE	1.0	0.7	0.2
CYCLOPENTANE	0.1	0.3	0.1
HEXANES PLUS	0.6	0.4	0.1
NITROGEN	4.4	0.2	0.3
OXYGEN	0.1	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.3	0.0
HYDROGEN SULFIDE**	2.6	0.0	0.0
CARBON DIOXIDE	10.6	4.2	0.6
HELIUM	0.12	TRACE	0.01
HEATING VALUE*	981	1116	1131
SPECIFIC GRAVITY	0.773	0.688	0.642

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 259 SAMPLE 17066	INDEX 260 SAMPLE 17119	INDEX 261 SAMPLE 16902
STATE	WYOMING	WYOMING	WYOMING
COUNTY	UINTA	UINTA	UINTA
FIELD	GLASSCOCK HOLLOW	HENRY	MOXA ARCH-VERNE
WELL NAME	BROKEN CIRCLE NO. 2-35-4C	HENRY UNIT NO. 8	CHAMPLIN 186 AMOCO "H" NO. 1
LOCATION	SEC. 35, T15N, R120W	SEC. 33, T14N, R113W	SEC. 1, T18N, R113W
OWNER	GULF OIL EXPL. & PROD. CO.	FOREST OIL CORP.	AMOCO PRODUCTION CO. (USA)
COMPLETED	12/--/82	07/21/83	02/--/82
SAMPLED	09/14/83	10/19/83	04/26/83
FORMATION	JURA-WATTON CANYON	CRET-DAKOTA	CRET-DAKOTA
GEOLOGIC PROVINCE CODE	535	535	535
DEPTH, FEET	12985	13522	12072
WELLHEAD PRESSURE,PSIG	1700	3900	5000
OPEN FLOW, MCFD	250	1636	2200
COMPONENT, MOLE PCT			
METHANE	72.6	84.5	83.0
ETHANE	14.0	7.3	9.6
PROPANE	6.3	3.5	3.2
N-BUTANE	1.3	0.8	0.6
ISOBUTANE	1.1	0.9	0.5
N-PENTANE	0.1	0.2	0.1
ISOPENTANE	0.9	0.3	0.4
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.2	0.3	0.1
NITROGEN	2.7	1.0	1.1
OXYGEN	TRACE	TRACE	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	0.0	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	1.0	1.0
HELIUM	0.02	0.01	0.01
HEATING VALUE*	1288	1175	1160
SPECIFIC GRAVITY	0.761	0.684	0.675

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 262 SAMPLE 16903
STATE	WYOMING
COUNTY	UINTA
FIELD	MOXA ARCH-VERNE
WELL NAME	CHAMPLIN 186 AMOCO "H" NO. 1
LOCATION	SEC. 1, T18N, R113W
OWNER	AMOCO PRODUCTION CO. (USA)
COMPLETED	11/03/82
SAMPLED	04/26/83
FORMATION	CRET-FRONTIER
GEOLOGIC PROVINCE CODE	535
DEPTH, FEET	11520
WELLHEAD PRESSURE,PSIG	4800
OPEN FLOW, MCFD	444
COMPONENT, MOLE PCT	
METHANE	76.2
ETHANE	13.5
PROPANE	5.3
N-BUTANE	1.1
ISOBUTANE	0.8
N-PENTANE	0.1
ISOPENTANE	0.6
CYCLOPENTANE	0.1
HEXANES PLUS	0.2
NITROGEN	1.0
OXYGEN	0.0
ARGON	TRACE
HYDROGEN	0.2
HYDROGEN SULFIDE**	0.0
CARBON DIOXIDE	0.8
HELIUM	0.01
HEATING VALUE*	1260
SPECIFIC GRAVITY	0.734

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 1 SAMPLE 16859	INDEX 2 SAMPLE 16857	INDEX 3 SAMPLE 17117
STATE	ALASKA	ALASKA	ARKANSAS
COUNTY	N SLOPE-NPR4	N SLOPE-NPR4	CLARK
FIELD	SOUTH BARROW EAST & BARROW E	SOUTH BARROW EAST & BARROW E	NOT GIVEN
PLANT NAME	BARROW S & E	BARROW E	BEIRNE COMPRESSOR STA.
LOCATION	TRANSMISSION LINE	TRANSMISSION LINE	20 IN. LINE
OWNER	U.S. GEOLOGICAL SURVEY	U.S. GEOLOGICAL SURVEY	ARKANSAS LOUISIANA GAS CO.
SAMPLED	03/28/83	03/29/83	10/25/83
FORMATION	JURA-BARROW SAND	JURA-BARROW SAND	NOT GIVEN
GEOLOGIC PROVINCE CODE	972	972	400
PRESSURE,PSIG	NOT GIVEN	855	650
FLOW,MCFD	NOT GIVEN	7700	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	95.0	94.3	95.0
ETHANE	0.7	0.6	1.6
PROPANE	TRACE	0.0	0.3
N-BUTANE	0.1	0.2	0.1
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	0.0	0.1	TRACE
ISOPENTANE	0.0	0.1	TRACE
CYCLOPENTANE	0.0	TRACE	TRACE
HEXANES PLUS	0.0	0.1	TRACE
NITROGEN	3.5	4.0	0.5
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.2	TRACE
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.2	2.3
HELIUM	0.15	0.18	0.06
HEATING VALUE*	979	987	1002
SPECIFIC GRAVITY	0.573	0.583	0.590

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 4 SAMPLE 17116	INDEX 5 SAMPLE 17115	INDEX 6 SAMPLE 17114
STATE	ARKANSAS	ARKANSAS	ARKANSAS
COUNTY	CLARK	LOGAN	LOGAN
FIELD	NOT GIVEN	NW AR FIELDS	W. AR, OK & TX PANHANDLE
PLANT NAME	BEIRNE COMPRESSOR STA.	DUNN JUNCTION	DUNN COMPRESSOR STA.
LOCATION	18 IN. A LINE	16 IN. LINE	30 IN. LINE
OWNER	ARKANSAS LOUISIANA GAS CO.	ARKANSAS LOUISIANA GAS CO.	ARKANSAS LOUISIANA GAS CO.
SAMPLED	10/25/83	10/24/83	10/24/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	400	345	345
PRESSURE,PSIG	285	650	500
FLOW,MCFD	NOT GIVEN	65000	400000
COMPONENT, MOLE PCT			
METHANE	83.4	97.4	94.7
ETHANE	5.8	1.2	1.5
PROPANE	2.2	0.1	0.2
N-BUTANE	0.8	0.0	0.1
ISOBUTANE	0.5	0.0	0.0
N-PENTANE	0.3	0.0	0.1
ISOPENTANE	0.2	0.0	0.0
CYCLOPENTANE	0.1	0.0	TRACE
HEXANES PLUS	0.2	0.0	0.1
NITROGEN	6.4	0.4	0.5
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	0.1	TRACE
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.0	0.8	2.6
HELIUM	0.03	0.09	0.06
HEATING VALUE*	1085	1011	1004
SPECIFIC GRAVITY	0.667	0.570	0.596

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 7 SAMPLE 17039	INDEX 8 SAMPLE 17038	INDEX 9 SAMPLE 16994
STATE	COLORADO	COLORADO	COLORADO
COUNTY	CHEYENNE	CHEYENNE	HUERFANO
FIELD	NW CO FIELDS	WATTENBURG (WY & DEN. AREA)	SHEEP MOUNTAIN
PLANT NAME	KIT CARSON COMPRESSOR STA.	KIT CARSON COMPRESSOR STA.	METER STA.
LOCATION	20 IN. DISCH.	20 IN. DISCH.	GATHERING SYSTEM
OWNER	COLORADO INTERSTATE GAS CO.	COLORADO INTERSTATE GAS CO.	ARCO OIL & GAS CO.
SAMPLED	09/01/83	09/01/83	07/27/83
FORMATION	NOT GIVEN	NOT GIVEN	CRET-DAKOTA & JURA ENTRADA
GEOLOGIC PROVINCE CODE	450	450	455
PRESSURE,PSIG	634	773	1450
FLOW,MCFD	137000	50000	85000
COMPONENT, MOLE PCT			
METHANE	88.2	83.8	1.5
ETHANE	6.3	9.7	0.2
PROPANE	0.9	1.9	0.0
N-BUTANE	0.1	0.2	0.2
ISOBUTANE	TRACE	0.1	0.0
N-PENTANE	TRACE	0.0	0.4
ISOPENTANE	0.1	0.1	0.0
CYCLOPENTANE	TRACE	TRACE	0.1
HEXANES PLUS	TRACE	TRACE	0.1
NITROGEN	2.1	1.0	1.1
OXYGEN	0.1	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	0.3	TRACE
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	1.8	3.0	96.5
HELIUM	0.05	0.02	0.03
HEATING VALUE*	1038	1087	52
SPECIFIC GRAVITY	0.623	0.660	1.516

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 10 SAMPLE 17110	INDEX 11 SAMPLE 16835	INDEX 12 SAMPLE 16834
STATE	KANSAS	KANSAS	KANSAS
COUNTY	CHASE	DICKINSON	ELLSWORTH
FIELD	RAWLINS, WY AREA	HUGOTON ANADARKO C KS W PANH	OK NM TX PAN & PERM. BASIN
PLANT NAME	MATFIELD COMPRESSOR STA.	ENTERPRISE COMPRESSOR STA.	WILSON COMP. STA. NO. 194
LOCATION	20 IN. BYPASS	2-24 IN.	42 IN.
OWNER	NORTHWEST CENTRAL PL. CORP.	MICHIGAN WISCONSIN PL. CO.	NATURAL GAS PL CO OF AMERICA
SAMPLED	10/20/83	03/17/83	03/17/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	340	380	385
PRESSURE,PSIG	245	790	142
FLOW,MCFD	27000	220000	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	92.4	92.4	91.5
ETHANE	3.9	2.5	3.6
PROPANE	0.2	0.4	1.0
N-BUTANE	0.0	0.2	0.2
ISOBUTANE	0.0	0.0	0.1
N-PENTANE	0.0	TRACE	0.1
ISOPENTANE	0.0	0.1	0.1
CYCLOPENTANE	0.0	TRACE	TRACE
HEXANES PLUS	0.0	TRACE	0.1
NITROGEN	3.1	3.1	2.9
OXYGEN	0.1	0.1	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	0.2	0.3
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.9	TRACE
HELIUM	0.10	0.08	0.12
HEATING VALUE*	1011	1003	1042
SPECIFIC GRAVITY	0.591	0.597	0.603

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 13 SAMPLE 16819	INDEX 14 SAMPLE 17144	INDEX 15 SAMPLE 17103
STATE	KANSAS	KANSAS	KANSAS
COUNTY	FINNEY	GRANT	GRANT
FIELD	HUGOTON	HUGOTON	HUGOTON
PLANT NAME	HOLCOMB COMPRESSOR STA.	HUGOTON COMPRESSOR STA.	ULYSSES COMPRESSOR STA.
LOCATION	20 IN. DISCH.	AMOCO A & B 25 IN. LINE	24 IN. DISCH.
OWNER	NORTHERN NATURAL GAS CO.	NORTHWEST CENTRAL PL. CORP.	KANSAS POWER & LIGHT CO.
SAMPLED	03/15/83	12/05/83	10/18/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	360
PRESSURE,PSIG	600	327	550
FLOW,MCFD	51000	140000	40000
COMPONENT, MOLE PCT			
METHANE	72.4	71.7	70.4
ETHANE	6.3	6.8	7.2
PROPANE	3.6	3.1	4.3
N-BUTANE	0.8	0.1	1.3
ISOBUTANE	0.3	0.1	0.5
N-PENTANE	0.1	TRACE	0.3
ISOPENTANE	0.2	0.0	0.3
CYCLOPENTANE	TRACE	TRACE	0.1
HEXANES PLUS	TRACE	TRACE	0.3
NITROGEN	15.3	17.6	14.7
OXYGEN	0.1	0.0	0.0
ARGON	0.1	TRACE	TRACE
HYDROGEN	0.2	0.0	TRACE
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.2	TRACE	TRACE
HELIUM	0.33	0.44	0.39
HEATING VALUE*	990	935	1059
SPECIFIC GRAVITY	0.708	0.692	0.739

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 16 SAMPLE 17123	INDEX 17 SAMPLE 17124	INDEX 18 SAMPLE 17125
STATE	KANSAS	KANSAS	KANSAS
COUNTY	GRANT	GRANT	GRANT
FIELD	HUGOTON	HUGOTON	HUGOTON
PLANT NAME	HUGOTON PLT.	HUGOTON PLT.	HUGOTON PLT.
LOCATION	26 IN. ASHLAND LINE	20 IN. MOBIL LINE	AMOCO 6 IN. SYSTEM
OWNER	NORTHWEST CENTRAL PL. CORP.	NORTHWEST CENTRAL PL. CORP.	NORTHWEST CENTRAL PL. CORP.
SAMPLED	10/24/83	10/24/83	10/24/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	360
PRESSURE,PSIG	85	197	334
FLOW,MCFD	22000	65000	20000
COMPONENT, MOLE PCT			
METHANE	73.2	74.1	65.7
ETHANE	5.9	6.5	4.9
PROPANE	3.3	2.8	2.6
N-BUTANE	0.9	0.3	0.7
ISOBUTANE	0.4	0.0	0.3
N-PENTANE	0.2	0.3	0.2
ISOPENTANE	0.1	0.0	0.1
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	0.1	0.1	0.2
NITROGEN	15.4	15.5	24.7
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.0	TRACE	0.0
HELIUM	0.44	0.44	0.60
HEATING VALUE*	995	971	881
SPECIFIC GRAVITY	0.706	0.692	0.732

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 19 SAMPLE 17126	INDEX 20 SAMPLE 17127	INDEX 21 SAMPLE 17105
STATE	KANSAS	KANSAS	KANSAS
COUNTY	GRANT	GRANT	HARVEY
FIELD	HUGOTON	HUGOTON	RAWLINS, WY AREA
PLANT NAME	HUGOTON PLT.	HUGOTON PLT.	HESSTON COMPRESSOR STA.
LOCATION	HELIX DISCH.	26 IN. DISCH.	2-26 IN. DISCH.
OWNER	NORTHWEST CENTRAL PL. CORP.	NORTHWEST CENTRAL PL. CORP.	NORTHWEST CENTRAL PL. CORP.
SAMPLED	10/25/83	10/25/83	10/19/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	375
PRESSURE,PSIG	100	764	730
FLOW,MCFD	210000	213000	59000
COMPONENT, MOLE PCT			
METHANE	77.7	78.1	86.5
ETHANE	7.5	7.5	6.8
PROPANE	0.9	0.8	2.4
N-BUTANE	0.1	0.1	0.4
ISOBUTANE	TRACE	TRACE	0.4
N-PENTANE	TRACE	TRACE	0.1
ISOPENTANE	0.0	0.0	0.1
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	TRACE	0.1
NITROGEN	13.4	13.1	1.2
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	TRACE
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	TRACE	1.9
HELIUM	0.19	0.20	0.02
HEATING VALUE*	953	950	1101
SPECIFIC GRAVITY	0.658	0.653	0.653

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 22 SAMPLE 17037	INDEX 23 SAMPLE 17104	INDEX 24 SAMPLE 17106
STATE	KANSAS	KANSAS	KANSAS
COUNTY	KEARNY	KINGMAN	LYON
FIELD	KS HUGOTON	SPIVEY-ULYSSES	ANADARKO BASIN
PLANT NAME	LAKIN COMPRESSOR STA.	CALISTA COMPRESSOR STA.	OLPE COMPRESSOR STA.
LOCATION	20 IN. DISCH.	DISCH.INTO 16.18&24 IN. LINE	300 LINE 30 IN. SUCTION
OWNER	COLORADO INTERSTATE GAS CO.	KANSAS POWER & LIGHT CO.	PANHANDLE EASTERN PL. CO.
SAMPLED	08/31/83	10/19/83	10/20/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	375	335
PRESSURE,PSIG	816	496	860
FLOW,MCFD	78400	27000	274000
COMPONENT, MOLE PCT			
METHANE	68.5	84.3	63.1
ETHANE	6.1	5.6	9.5
PROPANE	4.2	1.7	5.8
N-BUTANE	0.8	0.5	1.1
ISOBUTANE	0.3	0.2	0.9
N-PENTANE	0.1	0.2	0.2
ISOPENTANE	0.2	0.1	0.0
CYCLOPENTANE	0.1	0.1	0.6
HEXANES PLUS	0.1	0.2	0.8
NITROGEN	18.7	6.8	15.4
OXYGEN	0.0	0.0	1.7
ARGON	0.1	TRACE	0.1
HYDROGEN	0.2	TRACE	TRACE
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	0.5
HELIUM	0.47	0.23	0.05
HEATING VALUE*	972	1049	1099
SPECIFIC GRAVITY	0.729	0.651	0.801

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 25 SAMPLE 17107	INDEX 26 SAMPLE 17108	INDEX 27 SAMPLE 17109
STATE	KANSAS	KANSAS	KANSAS
COUNTY	LYON	LYON	LYON
FIELD	HUGOTON & ANADARKO BASIN	HUGOTON & ANADARKO BASIN	HUGOTON & ANADARKO BASIN
PLANT NAME	OLPE COMPRESSOR STA.	OLPE COMPRESSOR STA.	PANHANDLE EASTERN PL. CO.
LOCATION	100 LINE 24 IN. SUCTION	200 LINE 26 IN. SUCTION	400 LINE 36 IN. SUCTION
OWNER	PANHANDLE EASTERN PL. CO.	PANHANDLE EASTERN PL. CO.	PANHANDLE EASTERN PL. CO.
SAMPLED	10/20/83	10/20/83	10/20/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	335	335	335
PRESSURE,PSIG	589	692	776
FLOW,MCFD	190000	248000	605000
COMPONENT, MOLE PCT			
METHANE	87.5	90.2	87.9
ETHANE	3.5	3.3	2.8
PROPANE	0.7	0.6	0.4
N-BUTANE	0.3	0.1	0.1
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.1	TRACE	TRACE
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	6.9	5.3	7.6
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	TRACE	TRACE
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.5	TRACE	0.5
HELIUM	0.26	0.20	0.29
HEATING VALUE*	991	1001	964
SPECIFIC GRAVITY	0.622	0.603	0.612

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 28 SAMPLE 17036	INDEX 29 SAMPLE 17035	INDEX 30 SAMPLE 17102
STATE	KANSAS	KANSAS	KANSAS
COUNTY	MORTON	MORTON	MORTON
FIELD	GREENWOOD	GREENWOOD-SPARKS	KEYES & GREENWOOD
PLANT NAME	MORTON CO. COMPRESSOR STA.	MORTON CO. COMPRESSOR STA.	ELKHART COMPRESSOR STA.
LOCATION	12 IN. SUCTION	24 IN. SUCTION	24 IN. DISCH.
OWNER	COLORADO INTERSTATE GAS CO.	COLORADO INTERSTATE GAS CO.	PANHANDLE EASTERN PL. CO.
SAMPLED	08/31/83	08/31/83	10/18/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	360
PRESSURE,PSIG	230	230	500
FLOW,MCFD	20300	21700	30000
COMPONENT, MOLE PCT			
METHANE	67.7	63.3	69.2
ETHANE	6.9	6.6	6.0
PROPANE	3.8	4.6	3.4
N-BUTANE	0.5	1.7	1.0
ISOBUTANE	0.3	0.6	0.6
N-PENTANE	0.0	0.4	0.5
ISOPENTANE	0.1	0.8	0.0
CYCLOPENTANE	TRACE	0.1	0.5
HEXANES PLUS	TRACE	0.3	0.9
NITROGEN	19.6	20.2	17.0
OXYGEN	0.0	0.0	0.4
ARGON	0.1	0.1	TRACE
HYDROGEN	0.2	0.2	0.1
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.4	0.1
HELIUM	0.77	0.64	0.41
HEATING VALUE*	949	1027	1037
SPECIFIC GRAVITY	0.720	0.785	0.755

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 31 SAMPLE 16828	INDEX 32 SAMPLE 16827	INDEX 33 SAMPLE 16826
STATE	KANSAS	KANSAS	KANSAS
COUNTY	RICE	RICE	RICE
FIELD	ANADARKO	ANADARKO BASIN	BURDETT
PLANT NAME	BUSHTON COMPRESSOR STA.	BUSHTON COMPRESSOR STA.	BUSHTON COMPRESSOR STA.
LOCATION	30 IN. D FROM BEAVER	26 IN. C FROM ANADARKO	20 IN. B FROM BURDETT
OWNER	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.
SAMPLED	03/16/83	03/16/83	03/16/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	385	385	385
PRESSURE,PSIG	615	570	535
FLOW,MCFD	250000	300000	73000
COMPONENT, MOLE PCT			
METHANE	92.3	91.5	72.6
ETHANE	3.1	3.5	5.5
PROPANE	0.6	0.8	3.0
N-BUTANE	0.1	0.2	0.5
ISOBUTANE	TRACE	TRACE	0.3
N-PENTANE	TRACE	0.1	0.0
ISOPENTANE	TRACE	TRACE	0.2
CYCLOPENTANE	TRACE	TRACE	0.0
HEXANES PLUS	TRACE	0.1	0.0
NITROGEN	2.6	2.6	17.0
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.2	0.2	0.2
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.8	0.8	0.1
HELIUM	0.13	0.13	0.50
HEATING VALUE*	1010	1027	948
SPECIFIC GRAVITY	0.593	0.604	0.697

* CALCULATED GROSS BTU PER CU FT. DRY. AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 34 SAMPLE 16824	INDEX 35 SAMPLE 16825	INDEX 36 SAMPLE 16832
STATE	KANSAS	KANSAS	KANSAS
COUNTY	RICE	RICE	RICE
FIELD	HUGOTON	MACKSVILLE	OK SW KS & TX PANHANDLE
PLANT NAME	BUSHTON COMPRESSOR STA.	BUSHTON COMPRESSOR STA.	BUSHTON COMPRESSOR STA.
LOCATION	26 IN. A FROM SUBLETTE CO.	24 IN. B FROM MACKSVILLE	D-30 IN. DISCH.
OWNER	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.
SAMPLED	03/16/83	03/16/83	03/16/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	385	385	385
PRESSURE,PSIG	345	495	785
FLOW,MCFD	200000	100000	309000
COMPONENT, MOLE PCT			
METHANE	86.2	89.9	87.3
ETHANE	5.6	3.7	4.0
PROPANE	2.0	0.9	0.6
N-BUTANE	0.5	0.3	0.5
ISOBUTANE	0.2	0.0	0.2
N-PENTANE	0.1	0.1	0.2
ISOPENTANE	0.2	0.1	0.4
CYCLOPENTANE	TRACE	0.1	0.2
HEXANES PLUS	0.1	0.1	0.2
NITROGEN	4.4	3.5	5.4
OXYGEN	0.0	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.2	0.2
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.5	0.8	0.5
HELIUM	0.18	0.16	0.20
HEATING VALUE*	1068	1029	1039
SPECIFIC GRAVITY	0.643	0.614	0.636

* CALCULATED GROSS BTU PER CU FT. DRY. AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 37 SAMPLE 16831	INDEX 38 SAMPLE 16830	INDEX 39 SAMPLE 16829
STATE	KANSAS	KANSAS	KANSAS
COUNTY	RICE	RICE	RICE
FIELD	OK SW KS & TX PANHANDLE	OK SW KS & TX PANHANDLE	OK SW KS & TX PANHANDLE
PLANT NAME	BUSHTON COMPRESSOR STA.	BUSHTON COMPRESSOR STA.	BUSHTON COMPRESSOR STA.
LOCATION	C-26 IN. DISCH.	B-24 IN. DISCH.	A-26 IN. DISCH.
OWNER	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.
SAMPLED	03/16/83	03/16/83	03/16/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	385	385	385
PRESSURE,PSIG	720	590	515
FLOW,MCFD	416000	91000	119000
COMPONENT, MOLE PCT			
METHANE	91.5	89.6	90.8
ETHANE	3.4	3.8	3.8
PROPANE	0.4	1.0	0.5
N-BUTANE	TRACE	0.3	0.1
ISOBUTANE	TRACE	0.1	0.0
N-PENTANE	TRACE	0.1	0.0
ISOPENTANE	TRACE	0.1	0.1
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	TRACE	0.1	TRACE
NITROGEN	3.1	3.6	3.6
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.2	0.2
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.7	0.8	0.7
HELIUM	0.14	0.17	0.18
HEATING VALUE*	1003	1033	1009
SPECIFIC GRAVITY	0.592	0.618	0.602

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 40 SAMPLE 16833	INDEX 41 SAMPLE 17072	INDEX 42 SAMPLE 16823
STATE	KANSAS	KANSAS	KANSAS
COUNTY	RICE	RUSH	RUSH
FIELD	OK SW KS & TX PANHANDLE	CENTRAL KS FIELDS	PAWNEE & EDWARDS CO. KS AREA
PLANT NAME	BUSHTON COMPRESSOR STA.	KANSAS REFINED HELIUM PLT.	PAWNEE ROCK COMPRESSOR STA.
LOCATION	E-30 IN. DISCH.	INLET	8 IN. DISCH.
OWNER	NORTHERN NATURAL GAS CO.	AIRCO INDUSTRIAL GASES	KANSAS-NEBRASKA NAT. GAS CO.
SAMPLED	03/15/83	09/27/83	03/16/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	385	385	385
PRESSURE,PSIG	780	270	335
FLOW,MCFD	422000	8000	1500
COMPONENT, MOLE PCT			
METHANE	88.8	80.0	86.4
ETHANE	4.5	3.7	3.7
PROPANE	0.3	1.5	1.4
N-BUTANE	0.1	0.5	0.5
ISOBUTANE	0.0	0.3	0.2
N-PENTANE	0.0	0.1	0.1
ISOPENTANE	0.1	0.3	0.2
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	TRACE	0.1	0.1
NITROGEN	5.1	11.9	6.3
OXYGEN	TRACE	0.0	0.0
ARGON	TRACE	0.1	TRACE
HYDROGEN	0.2	0.3	0.2
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.6	TRACE	0.2
HELIUM	0.23	1.06	0.60
HEATING VALUE*	956	970	1020
SPECIFIC GRAVITY	0.608	0.656	0.630

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 43 SAMPLE 16822	INDEX 44 SAMPLE 16821	INDEX 45 SAMPLE 16520
STATE	KANSAS	KANSAS	KANSAS
COUNTY	SCOTT	SCOTT	SCOTT
FIELD	HUGOTON	KS HUGOTON	KS HUGOTON & BRADSHAW
PLANT NAME	SCOTT CITY COMPRESSOR STA.	SCOTT CITY COMPRESSOR STA.	SCOTT CITY COMPRESSOR STA.
LOCATION	12. IN. HELIUM PLT. INLET	LAKIN 12 IN. INLET	20 IN. DISCH.
OWNER	KANSAS-NEBRASKA NAT. GAS CO.	KANSAS-NEBRASKA NAT. GAS CO.	KANSAS-NEBRASKA NAT. GAS CO.
SAMPLED	03/15/83	03/15/83	03/15/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	360
PRESSURE,PSIG	365	365	320
FLOW,MCFD	86000	42000	84000
COMPONENT, MOLE PCT			
METHANE	69.0	71.2	69.6
ETHANE	5.5	6.5	5.8
PROPANE	2.9	3.7	0.9
N-BUTANE	0.7	1.2	0.1
ISOBUTANE	0.2	0.3	TRACE
N-PENTANE	0.1	0.2	0.0
ISOPENTANE	0.2	0.4	0.1
CYCLOPENTANE	TRACE	TRACE	0.0
HEXANES PLUS	TRACE	0.1	0.0
NITROGEN	20.6	15.7	20.3
OXYGEN	0.0	0.0	2.3
ARGON	0.1	0.1	0.1
HYDROGEN	0.2	0.2	0.2
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	0.1	0.1
HELIUM	0.53	0.41	0.15
HEATING VALUE*	917	1016	941
SPECIFIC GRAVITY	0.713	0.725	0.695

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 46 SAMPLE 17100	INDEX 47 SAMPLE 17101	INDEX 48 SAMPLE 17098
STATE	KANSAS	KANSAS	KANSAS
COUNTY	SEWARD	SEWARD	SEWARD
FIELD	FORGEN OK AREA	GRANT CO., KS AREA	HANSFORD-BORGER TX AREA
PLANT NAME	LIBERAL COMPRESSOR STA.	LIBERAL COMPRESSOR STA.	LIBERAL COMPRESSOR STA.
LOCATION	20 IN. HUBER LINE	26 IN. GRANT CO. LINE	24 & 26 IN. TX 300 INLET
OWNER	PANHANDLE EASTERN PL. CO.	PANHANDLE EASTERN PL. CO.	PANHANDLE EASTERN PL. CO.
SAMPLED	10/17/83	10/17/83	10/17/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	360
PRESSURE,PSIG	500	500	500
FLOW,MCFD	25000	15000	240000
COMPONENT, MOLE PCT			
METHANE	90.8	71.3	81.9
ETHANE	3.3	6.4	5.6
PROPANE	1.6	3.5	2.5
N-BUTANE	0.5	1.0	0.8
ISOBUTANE	0.2	0.3	0.3
N-PENTANE	0.1	0.2	0.2
ISOPENTANE	0.2	0.2	0.3
CYCLOPENTANE	0.1	TRACE	0.1
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	2.7	16.3	7.5
OXYGEN	0.0	TRACE	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	0.1	TRACE
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.2	TRACE	0.2
HELIUM	0.15	0.40	0.32
HEATING VALUE*	1066	994	1062
SPECIFIC GRAVITY	0.620	0.715	0.668

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 49 SAMPLE 17097	INDEX 50 SAMPLE 16818	INDEX 51 SAMPLE 16817
STATE	KANSAS	KANSAS	KANSAS
COUNTY	SEWARD	SEWARD	SEWARD
FIELD	HUGOTON	HUGOTON	HUGOTON
PLANT NAME	LIBERAL COMPRESSOR STA.	SUBLETTE COMPRESSOR STA.	SUBLETTE COMPRESSOR STA.
LOCATION	26 IN. HUGOTON INLET	A-20 IN. SUCTION	8 IN. SUCTION
OWNER	PANHANDLE EASTERN PL. CO.	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.
SAMPLED	10/17/83	03/15/83	03/15/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	360
PRESSURE,PSIG	550	408	116
FLOW,MCFD	70000	8700	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	71.9	74.3	72.0
ETHANE	6.8	5.0	5.6
PROPANE	3.6	2.7	1.7
N- BUTANE	1.0	0.8	0.5
ISO BUTANE	0.4	0.3	0.2
N-PENTANE	0.2	0.1	0.1
ISOPENTANE	0.2	0.3	0.2
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.2	0.1	0.1
NITROGEN	15.6	15.5	20.8
OXYGEN	0.0	TRACE	0.0
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.1	0.2	0.2
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	0.1
HELIUM	0.44	0.47	0.60
HEATING VALUE*	1022	972	880
SPECIFIC GRAVITY	0.721	0.694	0.693

* CALCULATED GROSS BTU PER CU FT. DRY. AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 52 SAMPLE 17099	INDEX 53 SAMPLE 16966	INDEX 54 SAMPLE 17149
STATE	KANSAS	NEW MEXICO	NEW MEXICO
COUNTY	SEWARD	CHAVES	SAN JUAN
FIELD	SEWARD CO., KS AREA	PECOS SLOPE	BEAUTIFUL MOUNTAIN
PLANT NAME	LIBERAL COMPRESSOR STA.	RED BLUFF NO. 1 COMP. STA.	NAVAJO REFINED HELIUM PLT.
LOCATION	16 IN. SEWARD CO. LINE	RED BLUFF	NOT GIVEN
OWNER	PANHANDLE EASTERN PL. CO.	TRANSWESTERN PIPELINE CO.	NAVAJO REFINED HELIUM CO.INC
SAMPLED	10/17/83	05/31/83	12/--/83
FORMATION	NOT GIVEN	PERM-ABO	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	430	580
PRESSURE,PSIG	180	400	NOT GIVEN
FLOW,MCFD	15000	328	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	72.9	84.6	1.8
ETHANE	5.7	4.7	0.2
PROPANE	3.0	1.8	0.1
N-BUTANE	0.9	0.7	0.1
ISOBUTANE	0.4	0.3	TRACE
N-PENTANE	0.2	0.2	0.1
ISOPENTANE	0.2	0.3	TRACE
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.1	0.3	0.1
NITROGEN	14.9	6.1	90.0
OXYGEN	TRACE	TRACE	0.0
ARGON	TRACE	TRACE	0.9
HYDROGEN	TRACE	0.3	TRACE
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	0.6
HELIUM	0.46	0.46	6.13
HEATING VALUE*	996	1063	37
SPECIFIC GRAVITY	0.705	0.652	0.922

* CALCULATED GROSS BTU PER CU FT. DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 55 SAMPLE 17056	INDEX 56 SAMPLE 16587	INDEX 57 SAMPLE 16814
STATE	NEW MEXICO	OHIO	OKLAHOMA
COUNTY	SAN JUAN	TUSCARAWAS	BEAVER
FIELD	BEAUTIFUL MOUNTAIN	EASTERN OHIO	ANADARKO BASIN
PLANT NAME	NAVAJO REFINED HELIUM PLT.	EAST OHIO GAS GUERNSEY STA.	BEAVER COMPRESSOR STA.
LOCATION	INLET COMPOSITE	18 IN.	B-26 IN. DISCH.
OWNER	NAVAJO REFINED HELIUM CO.INC	EAST OHIO GAS CO.	NORTHERN NATURAL GAS CO.
SAMPLED	09/--/83	07/21/82	03/14/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	580	160	360
PRESSURE,PSIG	437	640	670
FLOW,MCFD	1800	950	50000
COMPONENT, MOLE PCT			
METHANE	2.3	95.8	87.5
ETHANE	0.2	2.2	6.0
PROPANE	0.1	2.1	2.7
N-BUTANE	0.1	0.6	0.9
ISOBUTANE	TRACE	0.4	0.3
N-PENTANE	TRACE	0.2	0.2
ISOPENTANE	TRACE	0.1	0.4
CYCLOPENTANE	TRACE	TRACE	0.1
HEXANES PLUS	0.1	0.2	0.1
NITROGEN	90.0	4.2	0.6
OXYGEN	0.0	0.0	0.0
ARGON	0.9	TRACE	TRACE
HYDROGEN	TRACE	0.1	0.2
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.5	TRACE	0.9
HELIUM	5.57	0.12	0.06
HEATING VALUE*	38	1092	1140
SPECIFIC GRAVITY	0.920	0.648	0.655

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 58 SAMPLE 16813	INDEX 59 SAMPLE 16816	INDEX 60 SAMPLE 16815
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	BEAVER	BEAVER	BEAVER
FIELD	ANADARKO BASIN	KERMIT, TX AREA	PERMIAN BASIN-WEST TX
PLANT NAME	BEAVER COMPRESSOR STA.	BEAVER COMPRESSOR STA.	BEAVER COMPRESSOR STA.
LOCATION	A-24 IN. DISCH.	DE-30 IN. DISCH.	C-30 IN. DISCH.
OWNER	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.
SAMPLED	03/14/83	03/14/83	03/14/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	360
PRESSURE,PSIG	335	950	655
FLOW,MCFD	55000	175000	425000
COMPONENT, MOLE PCT			
METHANE	84.9	83.7	81.7
ETHANE	5.6	3.6	3.4
PROPANE	1.6	0.9	0.8
N-BUTANE	0.5	0.2	0.2
ISOBUTANE	0.1	0.1	TRACE
N-PENTANE	0.1	0.1	TRACE
ISOPENTANE	0.1	TRACE	TRACE
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	0.1	0.1	TRACE
NITROGEN	6.3	8.2	2.4
OXYGEN	TRACE	1.6	0.0
ARGON	TRACE	0.1	TRACE
HYDROGEN	0.2	0.2	0.2
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.3	1.0	1.0
HELIUM	0.23	0.14	0.13
HEATING VALUE*	1036	960	1018
SPECIFIC GRAVITY	0.641	0.644	0.599

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 61 SAMPLE 17034	INDEX 62 SAMPLE 16836	INDEX 63 SAMPLE 17111
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CIMARRON	CREEK	KAY
FIELD	KEYES GAS AREA	WESTERN OK AREA	EDMOND, OKC & ENID OK AREA
PLANT NAME	KEYES COMPRESSOR STA.	DEPEW COMPRESSOR STA.	BLACKWELL COMPRESSOR STA.
LOCATION	16 IN. INLET	24 IN. DISCH.	20 IN. OKC LINE
OWNER	COLORADO INTERSTATE GAS CO.	OKLAHOMA NATURAL GAS CO.	NORTHWEST CENTRAL PL. CORP.
SAMPLED	08/23/83	03/21/83	10/21/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	435	355	355
PRESSURE,PSIG	470	800	315
FLOW,MCFD	17000	400000	20000
COMPONENT, MOLE PCT			
METHANE	62.8	89.6	90.8
ETHANE	4.0	5.8	4.7
PROPANE	2.6	1.0	1.1
N-BUTANE	0.8	0.2	0.3
ISOBUTANE	0.4	TRACE	0.1
N-PENTANE	0.2	TRACE	0.1
ISOPENTANE	0.4	TRACE	TRACE
CYCLOPENTANE	TRACE	TRACE	0.1
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	25.7	2.3	2.4
OXYGEN	0.0	0.0	0.0
ARGON	0.1	TRACE	TRACE
HYDROGEN	0.2	0.2	0.1
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.9	0.6	0.3
HELIUM	1.76	0.04	0.06
HEATING VALUE*	847	1050	1060
SPECIFIC GRAVITY	0.740	0.612	0.614

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 64 SAMPLE 17113	INDEX 65 SAMPLE 17112	INDEX 66 SAMPLE 17096
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	KAY	KAY	TEXAS
FIELD	GUYMON-HUGOTON	PANHANDLE W	LIBERAL
PLANT NAME	BLACKWELL COMPRESSOR STA.	BLACKWELL COMPRESSOR STA.	BAKER COMPRESSOR STA.
LOCATION	26 IN. GUYMON LINE	26 IN. TRANSWESTERN LINE	26 IN. MAINLINE DISCH.
OWNER	NORTHWEST CENTRAL PL. CORP.	NORTHWEST CENTRAL PL. CORP.	NORTHWEST CENTRAL PL. CORP.
SAMPLED	10/21/83	10/21/83	10/17/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	355	355	360
PRESSURE,PSIG	508	536	166
FLOW,MCFD	29000	29000	8000
COMPONENT, MOLE PCT			
METHANE	88.6	99.4	77.4
ETHANE	5.9	5.9	5.6
PROPANE	0.9	1.5	3.1
N-BUTANE	0.1	0.4	0.9
ISOBUTANE	0.0	0.1	0.5
N-PENTANE	0.1	0.1	0.2
ISOPENTANE	0.0	0.1	0.3
CYCLOPENTANE	TRACE	TRACE	0.1
HEXANES PLUS	TRACE	0.1	0.2
NITROGEN	3.8	1.7	11.2
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	TRACE	TRACE
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.4	0.5	0.1
HELIUM	0.14	0.06	0.33
HEATING VALUE*	1034	1081	1047
SPECIFIC GRAVITY	0.615	0.623	0.696

* CALCULATED GROSS BTU PER CU FT. DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 67 SAMPLE 17095	INDEX 68 SAMPLE 17055	INDEX 69 SAMPLE 17052
STATE	TEXAS	TEXAS	TEXAS
COUNTY	GRAY	HANSFORD	HANSFORD
FIELD	PANHANDLE	CARTHAGE,TX & GUYMON-HUGOTON	CARTHAGE,TX & GUYMON-HUGOTON
PLANT NAME	OLPE COMPRESSOR STA.	SHER-HAN PLT.	SHERMAN PLT.
LOCATION	20 IN. LINE	24 IN. PLT. OUTLET	M.O.G.H&RR 24 IN. LINE
OWNER	NORTHWEST CENTRAL PL. CORP.	PHILLIPS PETROLEUM CO.	PHILLIPS PETROLEUM CO.
SAMPLED	10/17/83	09/09/83	09/09/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	440	360	360
PRESSURE,PSIG	273	200	208
FLOW,MCFD	8500	102404	96392
COMPONENT, MOLE PCT			
METHANE	76.8	79.6	70.4
ETHANE	7.1	6.7	6.8
PROPANE	4.9	2.0	4.3
N-BUTANE	1.9	0.2	1.4
ISOBUTANE	0.8	TRACE	0.6
N-PENTANE	0.4	TRACE	0.2
ISOPENTANE	0.5	0.1	0.6
CYCLOPENTANE	0.1	TRACE	0.2
HEXANES PLUS	0.2	TRACE	0.3
NITROGEN	6.9	10.8	14.3
OXYGEN	0.0	0.1	0.0
ARGON	TRACE	0.1	0.1
HYDROGEN	TRACE	0.3	0.3
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.0	0.1	0.1
HELIUM	0.25	0.09	0.66
HEATING VALUE*	1176	990	1072
SPECIFIC GRAVITY	0.731	0.658	0.746

* CALCULATED GROSS BTU PER CU FT. DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 70 SAMPLE 17033	INDEX 71 SAMPLE 17077	INDEX 72 SAMPLE 17093
STATE	TEXAS	TEXAS	TEXAS
COUNTY	HANSFORD	HANSFORD	HANSFORD
FIELD	OK & TX PANHANDLE	TX & GUYMON-HUGOTON	TX & GUYMON-HUGOTON
PLANT NAME	HANSFORD PLT.	HANSFORD PLT.	SHERMAN PLT.
LOCATION	20 IN. PLT. OUTLET	A.B.C.D.E & F LINES	COMO. HAM & HOUGH LINES
OWNER	PHILLIPS PETROLEUM CO.	PHILLIPS PETROLEUM CO.	PHILLIPS PETROLEUM CO.
SAMPLED	08/29/83	09/27/83	09/09/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	360
PRESSURE,PSIG	348	120	210
FLOW,MCFD	37110	38000	34000
COMPONENT, MOLE PCT			
METHANE	77.7	74.1	80.0
ETHANE	7.0	6.7	5.2
PROPANE	3.6	3.9	3.4
N-BUTANE	0.1	1.3	1.7
ISOBUTANE	0.1	0.5	0.6
N-PENTANE	0.0	0.2	0.3
ISOPENTANE	0.1	0.5	0.7
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	TRACE	0.1	0.2
NITROGEN	10.7	11.8	2.4
OXYGEN	0.0	0.0	0.0
ARGON	0.1	0.1	TRACE
HYDROGEN	0.3	0.3	0.3
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	0.1
HELIUM	0.38	0.40	0.10
HEATING VALUE*	1018	1072	1233
SPECIFIC GRAVITY	0.674	0.720	0.720

* CALCULATED GROSS BTU PER CU FT. DRY. AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 73 SAMPLE 16811	INDEX 74 SAMPLE 16810	INDEX 75 SAMPLE 16812
STATE	TEXAS	TEXAS	TEXAS
COUNTY	HUTCHINSON	HUTCHINSON	MOORE
FIELD	ANADARKO BASIN	PANHANDLE W	PANHANDLE W
PLANT NAME	FRITCH STA. 111	FRITCH STA. 111	STINNETT STA. 112
LOCATION	30 IN. DISCH.	24 IN. DISCH.	30 IN. DISCH.
OWNER	NATURAL GAS PL CO OF AMERICA	NATURAL GAS PL CO OF AMERICA	NATURAL GAS PL CO OF AMERICA
SAMPLED	03/14/83	03/14/83	03/14/83
FORMATION	NOT GIVEN	PERM-BROWN DOLOMITE&RED CAVE	NOT GIVEN
GEOLOGIC PROVINCE CODE	440	440	440
PRESSURE,PSIG	646	644	619
FLOW,MCFD	218000	148000	78000
COMPONENT, MOLE PCT			
METHANE	96.9	90.4	80.2
ETHANE	2.7	3.5	5.1
PROPANE	0.6	1.0	2.9
N-BUTANE	0.2	0.1	1.3
ISOBUTANE	TRACE	0.1	0.5
N-PENTANE	TRACE	0.0	0.3
ISOPENTANE	TRACE	0.1	0.5
CYCLOPENTANE	TRACE	0.0	0.1
HEXANES PLUS	TRACE	0.0	0.1
NITROGEN	1.2	3.7	8.2
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.2	0.2
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.9	0.7	0.2
HELIUM	0.06	0.17	0.38
HEATING VALUE*	1023	1016	1084
SPECIFIC GRAVITY	0.588	0.607	0.689

* CALCULATED GROSS BTU PER CU FT. DRY. AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 76 SAMPLE 17032	INDEX 77 SAMPLE 17029	INDEX 78 SAMPLE 17031
STATE	TEXAS	TEXAS	TEXAS
COUNTY	MOORE	MOORE	MOORE
FIELD	PANHANDLE W	PANHANDLE W	TX HUGOTON (OCHILTREE CO.)
PLANT NAME	MCKEE GASOLINE PLT.	BIVINS COMP. STA. PFC NO.21	MCKEE GASOLINE PLT.
LOCATION	20 IN. INLET FROM WEST	20 IN. DISCH.	24 IN. INLET FROM OCHILTREE
OWNER	DIAMOND SHAMROCK CORP.	COLORADO INTERSTATE GAS CO.	DIAMOND SHAMROCK CORP.
SAMPLED	08/25/83	08/29/83	08/29/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	440	440	440
PRESSURE,PSIG	225	65	225
FLOW,MCFD	70000	12070	133000
COMPONENT, MOLE PCT			
METHANE	69.9	69.2	84.8
ETHANE	8.4	7.4	6.8
PROPANE	6.8	5.0	3.5
N-BUTANE	2.7	2.0	1.1
ISOBUTANE	1.0	0.7	0.4
N-PENTANE	0.3	0.4	0.2
ISOPENTANE	0.9	1.0	0.6
CYCLOPENTANE	TRACE	0.2	0.1
HEXANES PLUS	0.1	0.3	0.2
NITROGEN	9.3	12.3	1.1
OXYGEN	0.1	0.0	0.0
ARGON	0.1	0.1	TRACE
HYDROGEN	0.3	0.3	0.3
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.7	0.5	0.9
HELIUM	0.37	0.68	0.07
HEATING VALUE*	1207	1138	1171
SPECIFIC GRAVITY	0.790	0.773	0.680

* CALCULATED GROSS BTU PER CU FT. DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 79 SAMPLE 17030	INDEX 80 SAMPLE 17041	INDEX 81 SAMPLE 17040
STATE	TEXAS	TEXAS	TEXAS
COUNTY	MOORE	MOORE	MOORE
FIELD	TX HUGOTON (SHERMAN CO.)	TX PANHANDLE AREA	TX PANHANDLE AREA
PLANT NAME	MCKEE GASOLINE PLT.	DUMAS COMPRESSOR STA.	DUMAS GASOLINE PLT.
LOCATION	22 IN. INLET FROM SHERMAN CO	14 IN INLET DUMAS HELIUM PLT	COMPOSITE
OWNER	DIAMOND SHAMROCK CORP.	EL PASO NATURAL GAS CO.	PHILLIPS PETROLEUM CO.
SAMPLED	08/29/83	09/02/83	09/02/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	440	440	440
PRESSURE,PSIG	225	166	200
FLOW,MCFD	46000	66300	94000
COMPONENT, MOLE PCT			
METHANE	69.1	80.9	70.0
ETHANE	6.8	5.5	7.0
PROPANE	4.3	1.0	4.9
N-BUTANE	1.3	TRACE	1.9
ISOBUTANE	0.5	TRACE	0.7
N-PENTANE	0.2	TRACE	0.3
ISOPENTANE	0.5	TRACE	0.8
CYCLOPENTANE	0.1	TRACE	0.1
HEXANES PLUS	0.1	TRACE	0.2
NITROGEN	15.9	11.8	13.2
OXYGEN	0.0	0.0	0.0
ARGON	0.1	0.1	0.1
HYDROGEN	0.3	0.3	0.3
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.2	TRACE	0.1
HELIUM	0.75	0.41	0.61
HEATING VALUE*	1034	945	1111
SPECIFIC GRAVITY	0.741	0.638	0.759

* CALCULATED GROSS BTU PER CU FT. DRY. AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 82 SAMPLE 17042	INDEX 83 SAMPLE 17043	INDEX 84 SAMPLE 16750
STATE	TEXAS	TEXAS	WEST VIRGINIA
COUNTY	MOORE	MOORE	SUMMERS
FIELD	WESTERN OK AREA	ZUBECK	KY VA & WV FIELDS
PLANT NAME	DUMAS COMPRESSOR STA.	DUMAS COMPRESSOR STA.	FLAT TOP COMPRESSOR STA.
LOCATION	20 IN. INLET	18 IN. INLET	20 IN. SUCTION
OWNER	EL PASO NATURAL GAS CO.	EL PASO NATURAL GAS CO.	COLUMBIA GAS TRANS. CORP.
SAMPLED	09/02/83	09/02/83	01/10/83
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	440	440	160
PRESSURE,PSIG	370	370	NOT GIVEN
FLOW,MCFD	241700	167000	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	94.9	94.0	93.5
ETHANE	2.6	2.0	4.1
PROPANE	0.4	0.6	0.5
N-BUTANE	0.1	0.2	0.2
ISOBUTANE	0.0	0.1	TRACE
N-PENTANE	TRACE	TRACE	TRACE
ISOPENTANE	0.1	0.1	TRACE
CYCLOPENTANE	TRACE	TRACE	0.1
HEXANES PLUS	TRACE	0.1	0.1
NITROGEN	0.3	1.1	0.8
OXYGEN	0.0	TRACE	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.3	0.3	0.5
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	1.2	1.4	0.1
HELIUM	0.03	0.04	0.06
HEATING VALUE*	1027	1024	1051
SPECIFIC GRAVITY	0.586	0.595	0.588

* CALCULATED GROSS BTU PER CU FT. DRY. AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 3. - SAMPLES FROM GAS AND OIL WELLS IN FOREIGN COUNTRIES

	INDEX 1 SAMPLE 16924
COUNTRY	CANADA
STATE OR PROVINCE	NW TERRITORIES
FIELD	WILDCAT
WELL NAME	DOME HUNT KENALOOAK J-94
LOCATION	BEAUFORT SEA
OWNER	DOME PETROLEUM LTD.
COMPLETED	10/28/82
SAMPLED	10/28/82
FORMATION	OLIG-KUGMALLIT
DEPTH, FEET	14731
WELLHEAD PRESSURE,PSIG	NOT GIVEN
OPEN FLOW, MCFD	NOT GIVEN
COMPONENT, MOLE PCT	
METHANE	91.3
ETHANE	1.7
PROPANE	1.0
N-BUTANE	0.9
ISOBUTANE	0.7
N-PENTANE	0.4
ISOPENTANE	1.1
CYCLOPENTANE	0.3
HEXANES PLUS	0.6
NITROGEN	0.4
OXYGEN	TRACE
ARGON	TRACE
HYDROGEN	0.2
HYDROGEN SULFIDE**	0.0
CARBON DIOXIDE	1.2
HELIUM	TRACE
HEATING VALUE*	1142
SPECIFIC GRAVITY	0.658

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 4. - SAMPLES FROM PIPELINES IN FOREIGN COUNTRIES

	INDEX 1 SAMPLE 16975	INDEX 2 SAMPLE 16976
COUNTRY.....	THAILAND	THAILAND
STATE OR PROVINCE.....	PHITSANULOK BSN	PHITSANULOK BSN
FIELD.....	SIRIKIT	SIRIKIT
PLANT NAME.....	NO. LKU-A01	NO. LKU-A02,D01,C01,F01
LOCATION.....	LAN KRABU FLOW STA.	LAN KRABU FLOW STA.
OWNER.....	THAI SHELL EXPL&PROD CO. LTD	THAI SHELL EXPL&PROD CO. LTD
SAMPLED.....	05/18/83	05/18/83
FORMATION.....	-LAN-KRABU	-LAN-KRABU
PRESSURE,PSIG.....	NOT GIVEN	NOT GIVEN
FLOW,MCFD.....	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT		
METHANE.....	48.0	58.4
ETHANE.....	23.8	15.8
PROPANE.....	17.9	12.9
N-BUTANE.....	4.7	3.8
ISOBUTANE.....	3.2	2.7
N-PENTANE.....	0.6	0.6
ISOPENTANE.....	2.3	1.9
CYCLOPENTANE.....	0.2	0.3
HEXANES PLUS.....	0.6	0.6
NITROGEN.....	0.6	1.1
OXYGEN.....	0.1	0.2
ARGON.....	TRACE	TRACE
HYDROGEN.....	0.2	0.2
HYDROGEN SULFIDE.....	0.0	0.0
CARBON DIOXIDE.....	0.8	1.6
HELIUM.....	TRACE	TRACE
HEATING VALUE*.....	1776	1578
SPECIFIC GRAVITY.....	1.056	0.950

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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